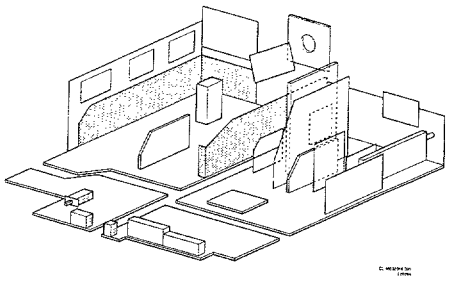
Colour television

Chassis

Service
Service
Service



FL2.24
FL2.26
FL4.27

AA

ServiceManual

Contents

			Page	
1.	Technical data		2	
2.	Connection facilities and chassis overview		2	
3.	Warnings and notes		3	
4.	Mechanical instructions		3	
5.	Block diagram		4	
6.	*Electrical diagrams and PWB lay-out*		*Diagram*	*PWB*
	Tuner, source selection	(Diagram C)	7	6
	Synchronisation and deflection (FLx.26/.27)	(Diagram B)	8	17
	Video processing	(Diagram D)	9	6
	Synchronisation and deflection (FLx.24)	(Diagram B)	10	19
	Sound processing	(Diagram F)	11	6
	Power supply (FLx.26/.27)	(Diagram A)	12	17
	Control	(Diagram H)	13	6
	Power supply (FLx.24)	(Diagram A)	14	19
	Picture tube panel	(Diagram E)	15	15
	Sound power amplifier	(Diagram G)	16	17,19
	Y/C detector	(Diagram I)	18	18
	SCAVEM filter (+ picture rotation 16:9)	(Diagram Y)	18	18
	SCAVEM amplifier	(Diagram Z)	18	18
	NICAM decoder	(Diagram K)	20	20
	PiP (Picture in Picture)	(Diagram J)	21	20
	100 Hz Digital Scan (FLx.24/.26)	(Diagram M)	22	23
	Teletext (FLx.24/.26)	(Diagram L)	23	23
	100 Hz/Teletext (FLx.27)	(Diagram L')	24	24
	Comb filter	(Diagram N)	25	25
	Black Stretch	(Diagram D')	26	26
	North / South correction 29" (N/S)	(Diagram B')	26	26
	Interface EURO AV3	(Diagram P)	26	26
	Connector EURO AV3	(Diagram R)	26	26
7.	Electrical adjustments		27	
8.	Fault finding methods and repair tips		29	
9.	Direction for use		31	
10.	Electrical parts list		33	

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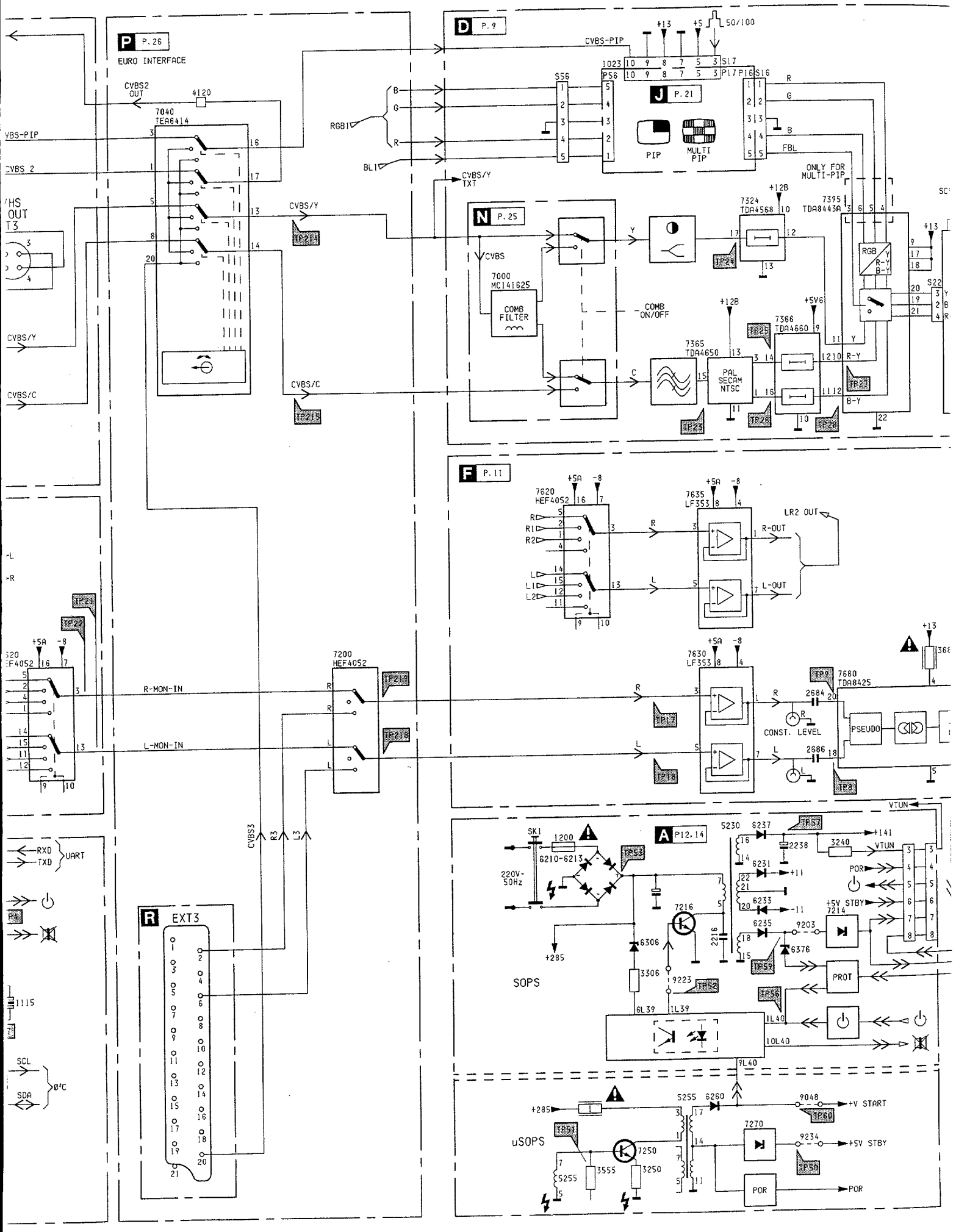
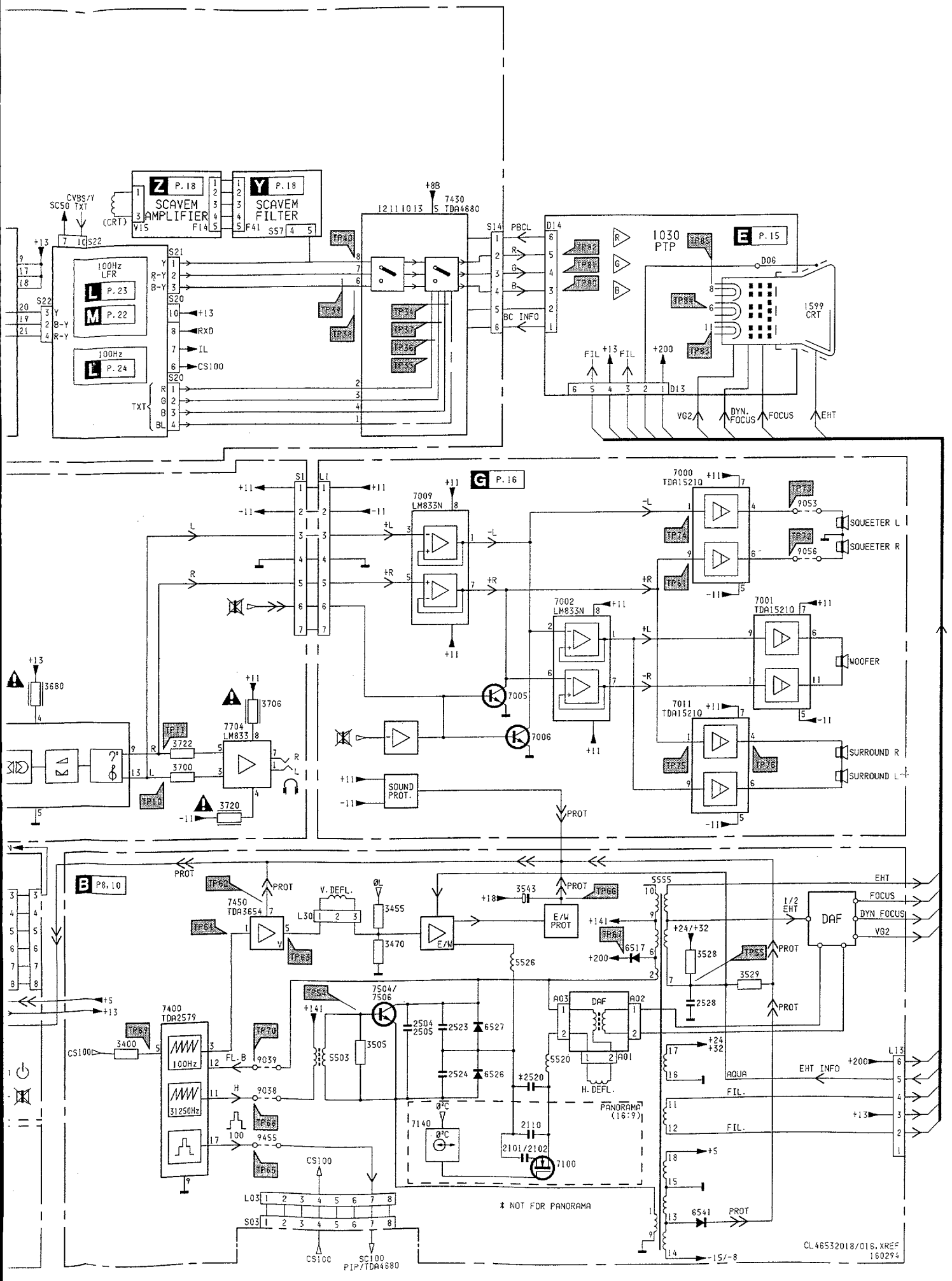
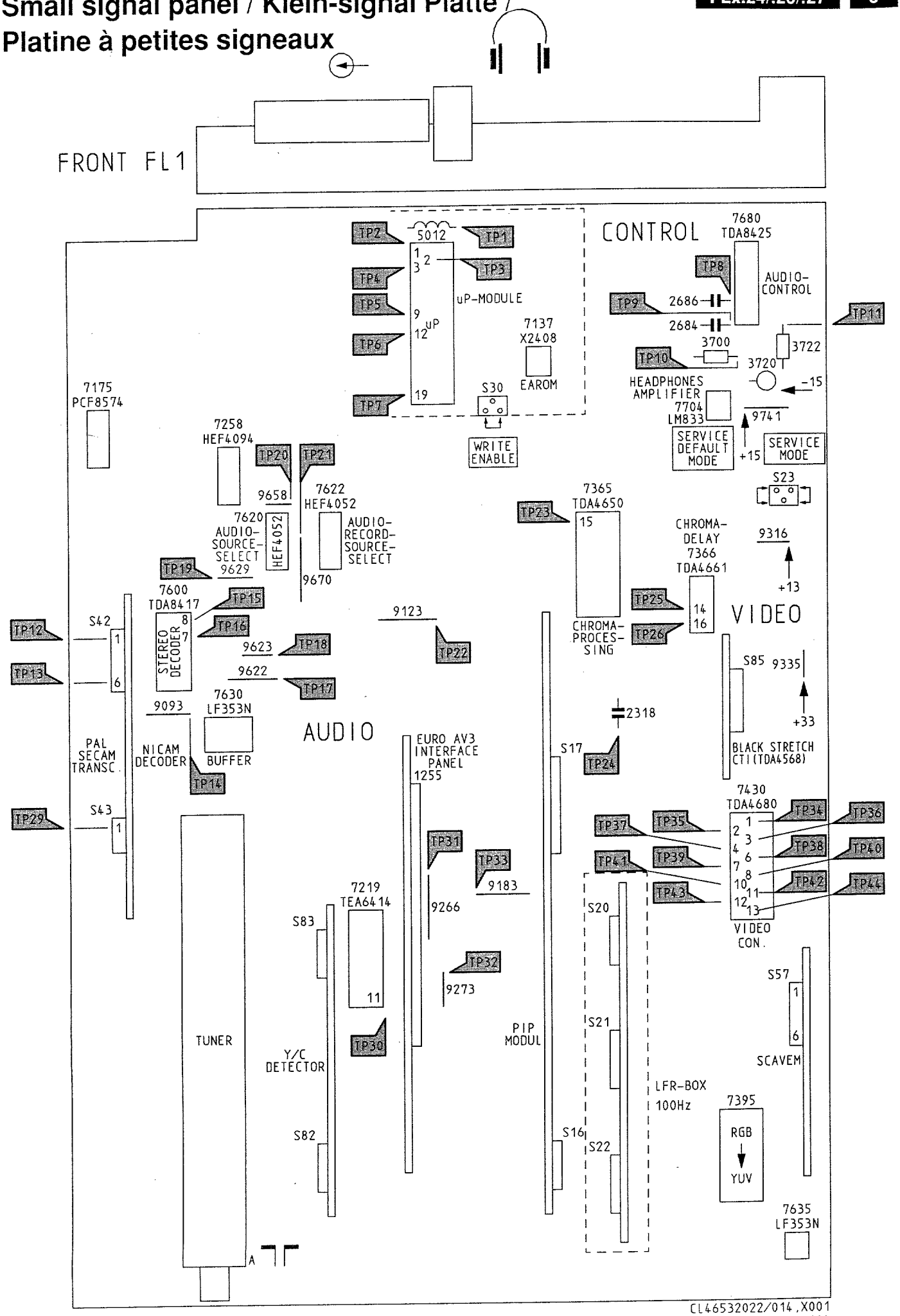

P P. 26
EURO INTERFACE
CVBS2 OUT
4120
7040 TEA6414
CVBS-PIP
CVBS 2
CVBS/Y
CVBS/C
D P. 9
CVBS-PIP
+13
+5
50/100
S56
PS6
S17
P17
P16
S16
J P. 21
PIP
MULTI PIP
RGB
R
G
B
FBL
BLI
CVBS/Y TXT
ONLY FOR MULTI-PIP
N P. 25
CVBS
7000 MC141625
COMB FILTER
COMB ON/OFF
7324 TDA4568
7395 TDA8443A
RGB
R-Y
B-Y
7365 TDA4650
PAL SECAM NTSC
7366 TDA4660
TP21
TP22
TP23
TP24
TP25
TP26
TP27
TP28
F P. 11
7620 HEF4052
7635 LF353
LR2 OUT
R-OUT
L-OUT
7200 HEF4052
R-MON-IN
L-MON-IN
7630 LF353
7680 TDA8425
CONST. LEVEL
PSEUDO
TP9
TP17
TP18
TP8
A P12.14
SK1
1200
6210-6213
220V-50Hz
7216
6306
3306
+285
SOPS
9223
TP52
6L39
1L39
1L40
10L40
9L40
5230
6237
2238
3240
VTUN
6231
6233
6235
9203
6376
7214
+5V STBY
POR
PROT
TP57
TP56
5255
6260
9048
+V START
TP60
uSOPS
TP51
7250
3555
3250
7270
9234
TP50
R EXT3
CVBS3
R3
L3
RXD
TXD
UART
SCL
SDA
Ø°C

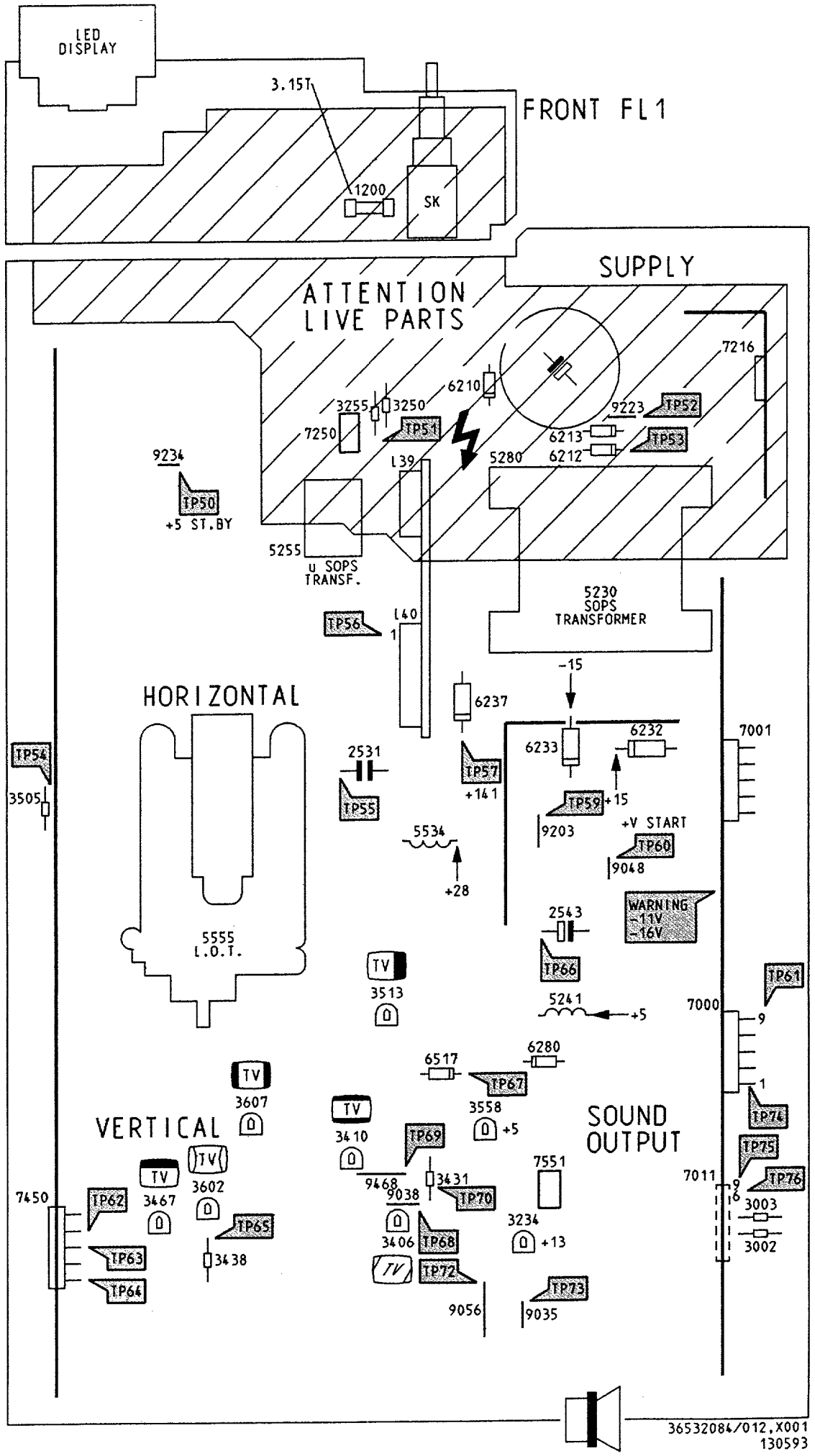
Diagramme schématique



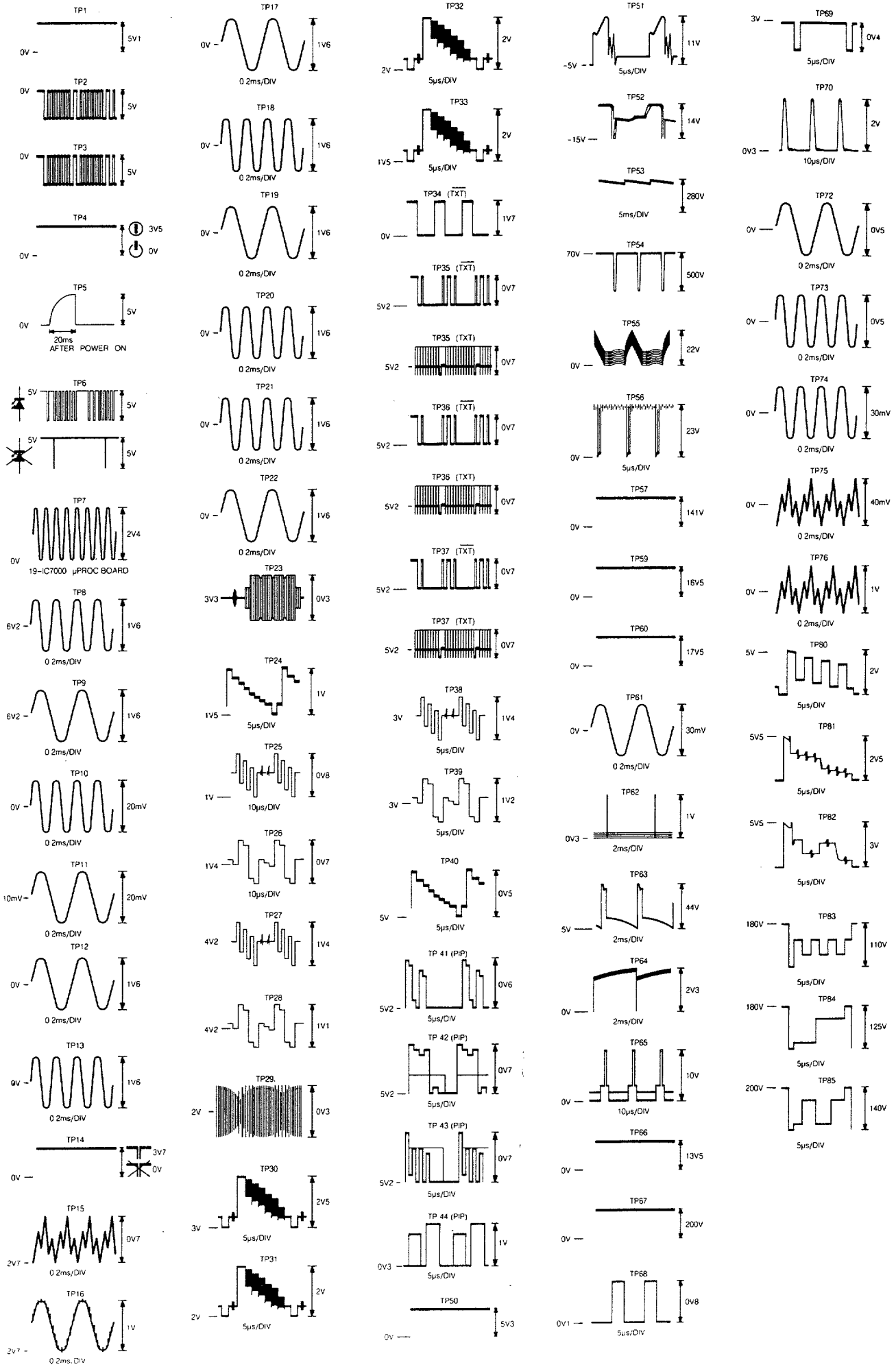
Small signal panel / Klein-signal Platte / Platine à petites signeaux



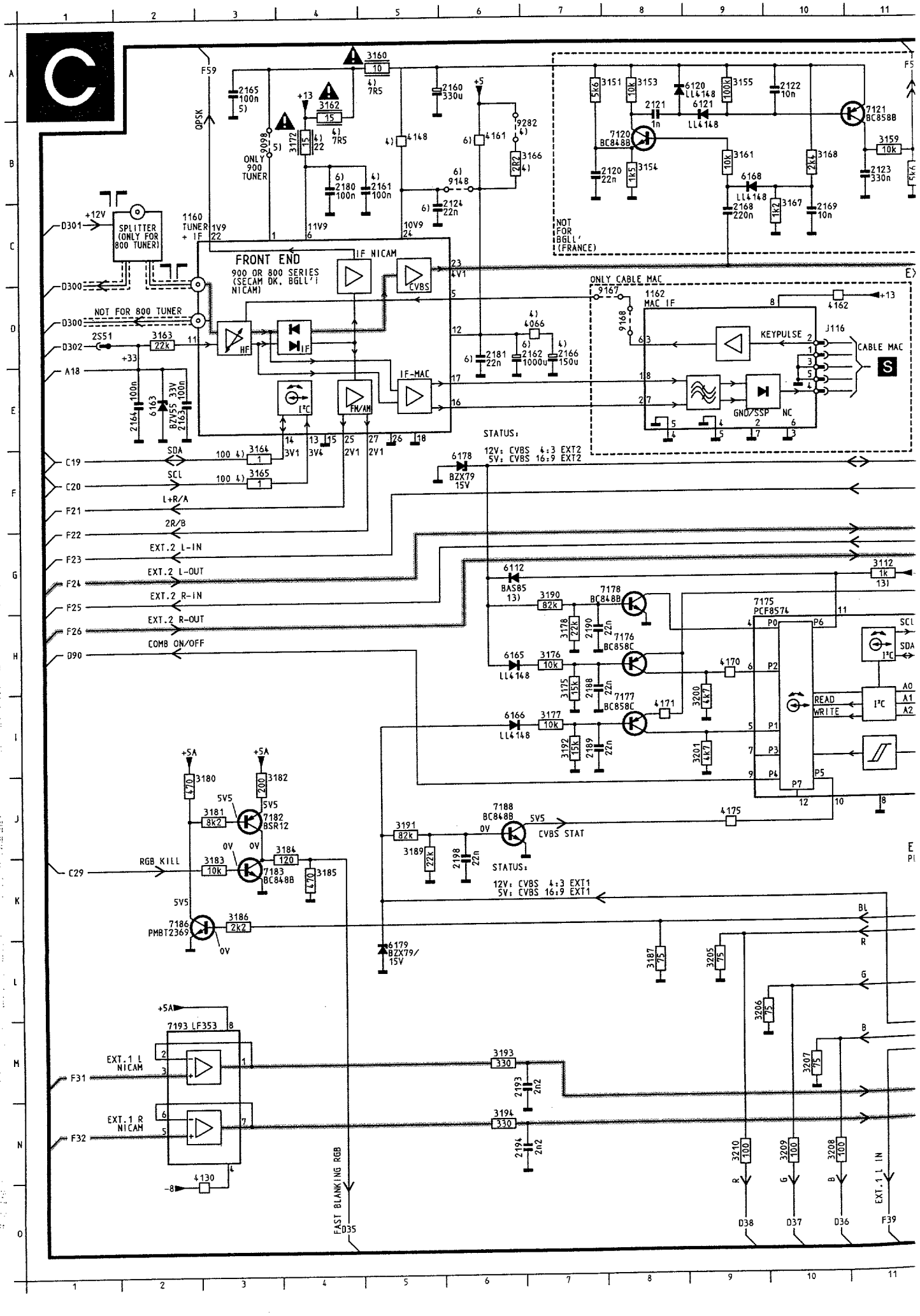
Large signal panel / Groß-signal Platte / Platine forts signeaux



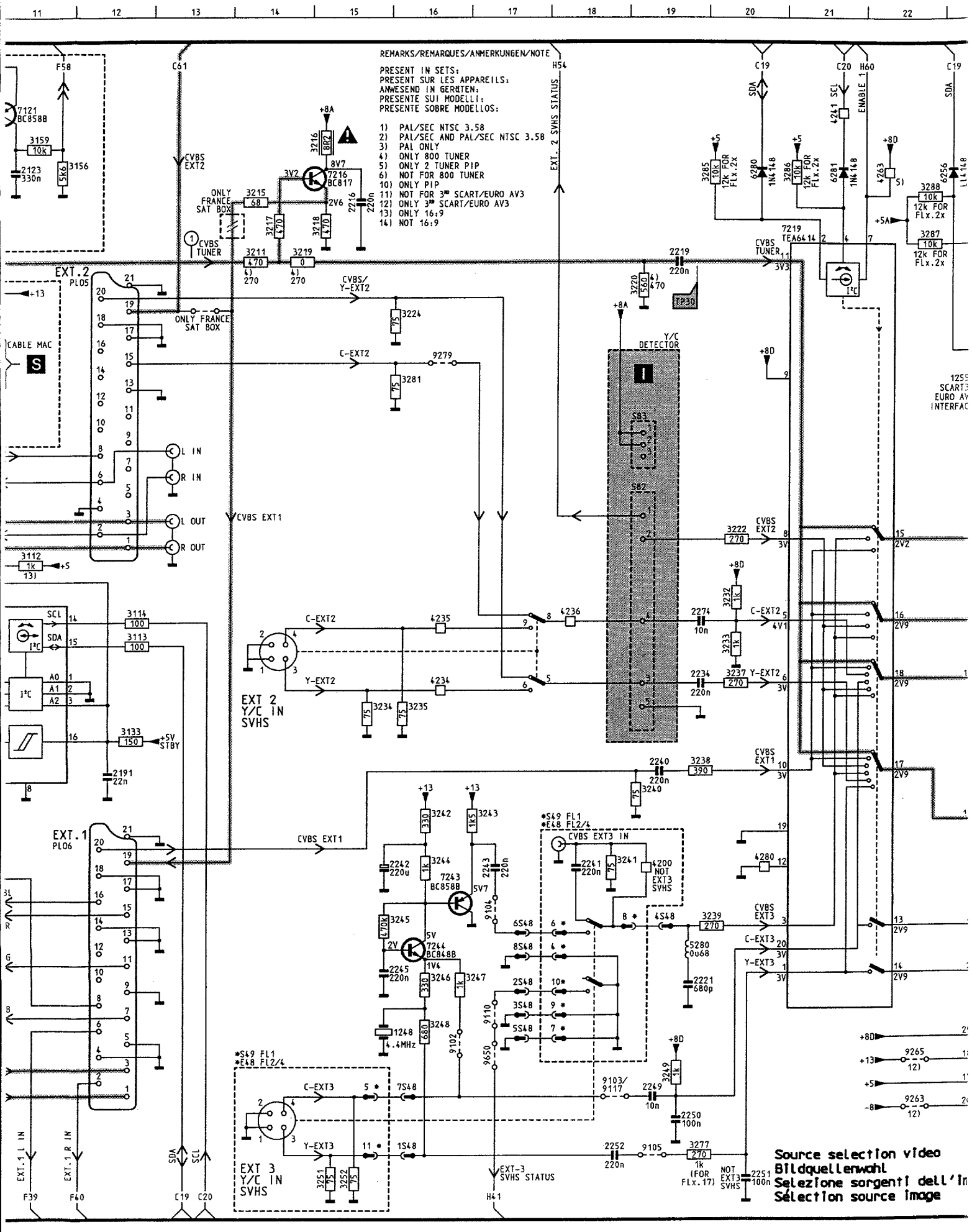
Oscillograms / Oscillogrammes

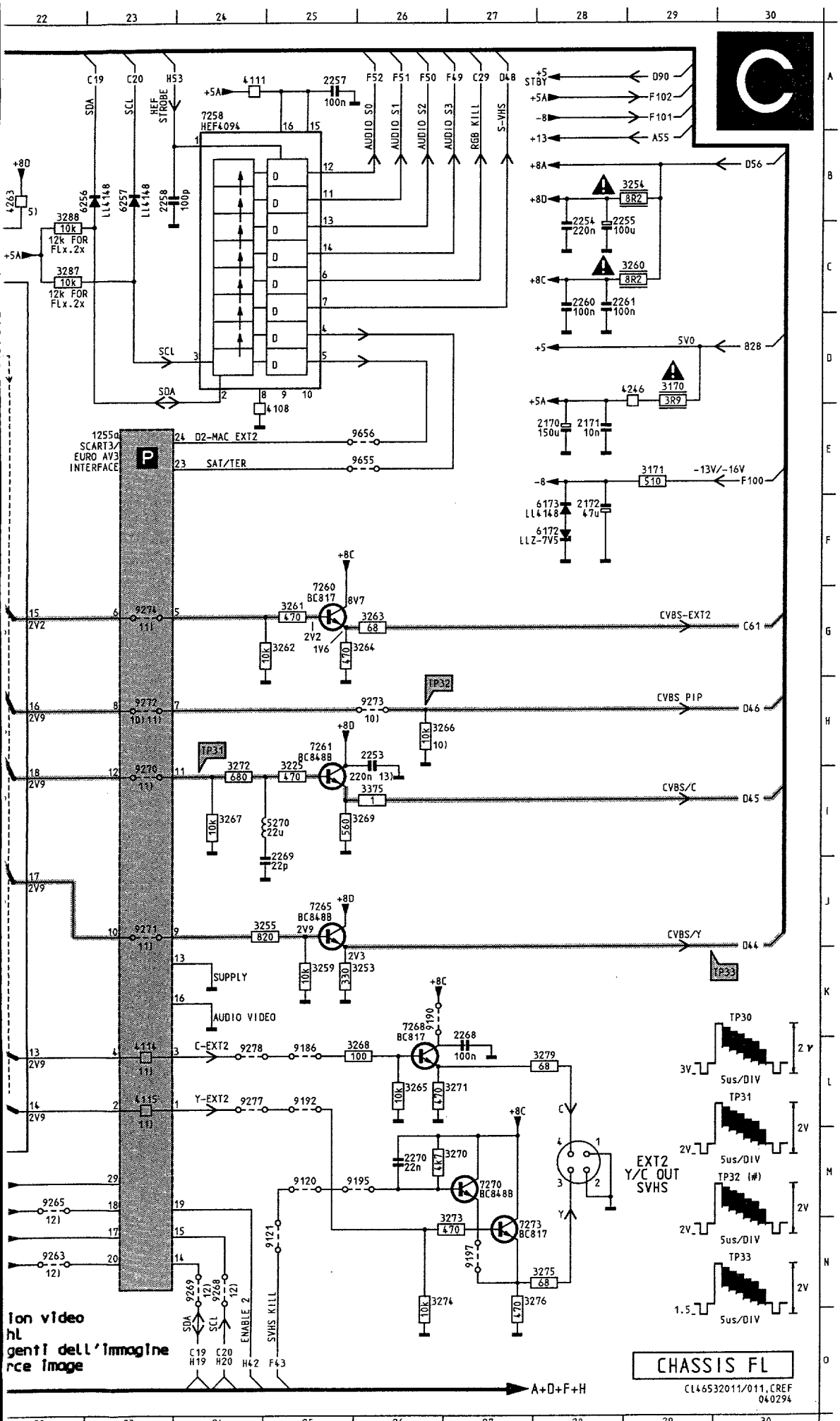


Source selection / Quellenwahl /



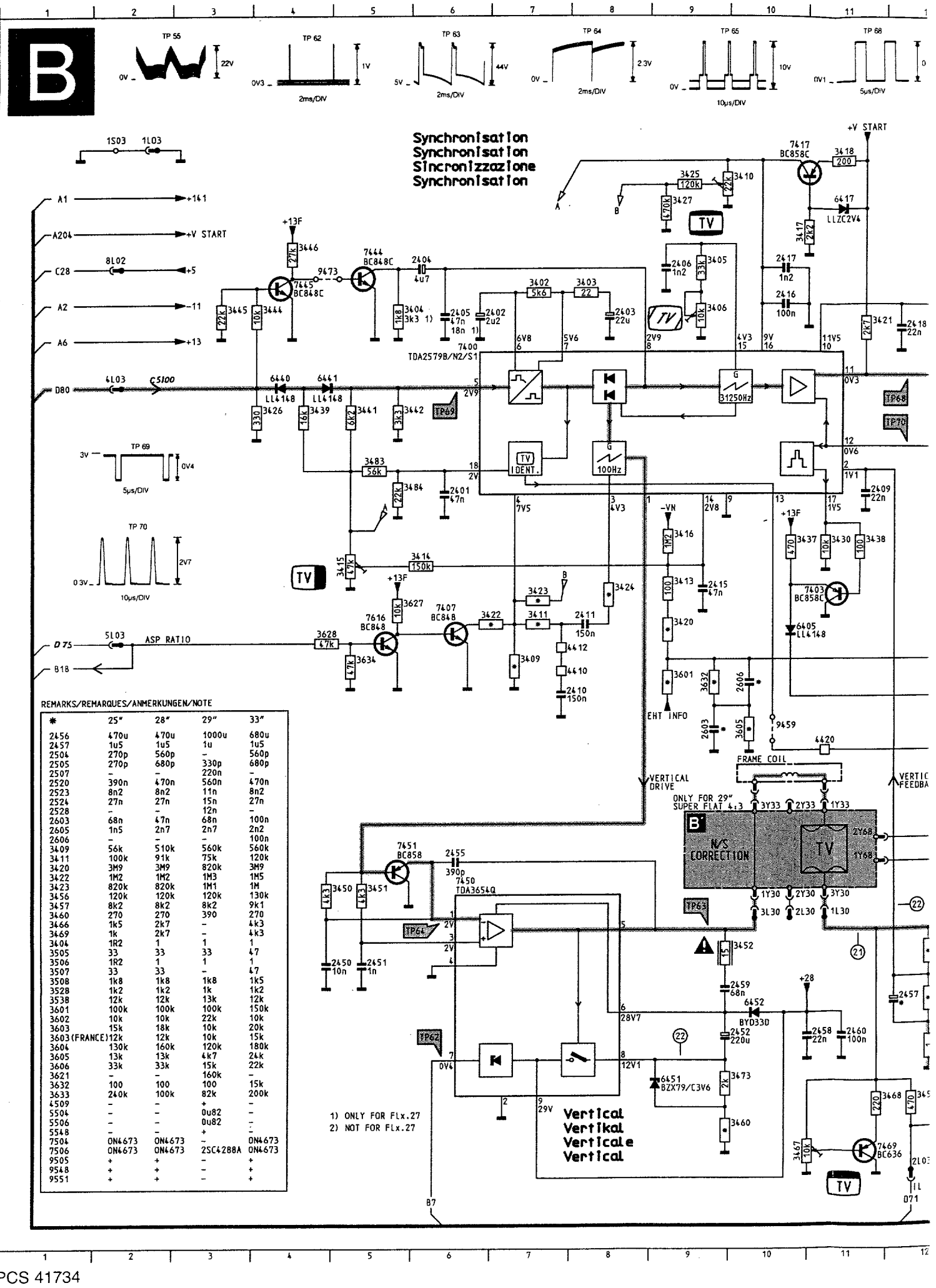
Sélection de source





1160	C 2	3237	I20	9192	L25
1162	D 8	3238	J19	9195	M26
1248	M16	3239	L20	9197	N27
1255	E23	3240	J19	9263	N22
2120	B 7	3241	K18	9265	M22
2121	A 8	3242	J16	9268	N24
2122	A10	3243	J17	9269	N24
2123	B11	3244	K16	9270	I23
2124	C 6	3245	L16	9271	J23
2160	A 6	3246	L16	9272	H23
2161	B 5	3247	L16	9273	H26
2162	D 7	3248	M16	9274	G23
2163	E 2	3249	N19	9277	L24
2164	E 2	3251	O15	9278	L24
2165	A 3	3252	O15	9279	E16
2166	D 7	3253	K25	9282	B 6
2168	C 9	3254	B29	9650	M17
2169	C10	3255	J25	9655	E26
2170	E28	3259	K25	9656	E26
2171	E28	3260	C29		
2172	F28	3261	G25		
2180	B 4	3262	G25		
2181	D 6	3263	G26		
2188	I 7	3264	G25		
2189	I 7	3265	L26		
2190	H 7	3266	H26		
2191	J12	3267	I24		
2193	M 6	3268	L26		
2194	N 6	3269	I25		
2198	K 6	3270	M27		
2216	C15	3271	L27		
2219	C19	3272	I24		
2221	L19	3273	N27		
2234	I19	3274	N26		
2240	J19	3275	N28		
2241	K18	3276	N27		
2242	K15	3277	O19		
2243	K17	3279	L28		
2245	L15	3281	E16		
2249	N19	3285	B19		
2250	N19	3286	B21		
2251	O20	3287	C22		
2252	O18	3288	B22		
2253	H26	3375	I26		
2254	C28	4066	D 7		
2255	C28	4108	E25		
2257	A25	4111	A24		
2258	B23	4114	L23		
2260	C28	4115	L23		
2261	C28	4130	N 3		
2268	L27	4148	B 5		
2269	J25	4161	B 6		
2270	M26	4162	D10		
2274	H19	4170	H 9		
3112	G11	4171	I 8		
3113	H12	4175	J 9		
3114	H12	4200	K19		
3133	I12	4234	I16		
3151	A 7	4235	H16		
3153	A 8	4236	H18		
3154	B 8	4241	B21		
3155	A 9	4246	D29		
3156	B11	4263	B22		
3159	B11	4280	K20		
3160	A 5	5270	I25		
3161	B 9	5280	L19		
3162	A 4	6112	G 6		
3163	D 2	6120	A 9		
3164	F 3	6121	A 9		
3165	F 3	6163	E 2		
3166	B 7	6165	H 6		
3167	C10	6166	I 6		
3168	B10	6168	B 9		
3170	D29	6172	F28		
3171	E29	6173	F28		
3172	B 4	6178	F 6		
3175	I 7	6179	L 5		
3176	H 7	6256	B23		
3177	I 7	6257	B23		
3178	H 7	6280	B20		
3180	I 2	6281	B21		
3181	J 3	7120	B 8		
3182	I 3	7121	B11		
3183	K 3	7175	H 9		
3184	J 4	7176	H 8		
3185	K 4	7177	I 8		
3186	K 3	7178	G 8		
3187	L 8	7182	J 3		
3189	J 5	7183	K 3		
3190	G 7	7186	K 2		
3191	J 5	7188	J 6		
3192	I 7	7193	M 2		
3193	M 6	7216	B15		
3194	N 6	7219	C20		
3200	I 9	7243	K16		
3201	I 9	7244	L16		
3205	L 9	7258	A24		
3206	L 9	7260	G25		
3207	M10	7261	H25		
3208	N10	7265	J25		
3209	N10	7268	K26		
3210	N 9	7270	M27		
3211	C14	7273	N27		
3215	C14	9098	B 3		
3216	B15	9102	M16		
3217	C14	9103	N18		
3218	C15	9104	K17		
3219	C14	9105	O19		
3220	D19	9110	M17		
3222	G20	9120	M25		
3224	D16	9121	N25		
3225	I25	9148	B 6		
3232	H20	9167	D 8		
3233	H20	9168	D 8		
3234	I15	9186	L25		
3235	I16	9190	K26		

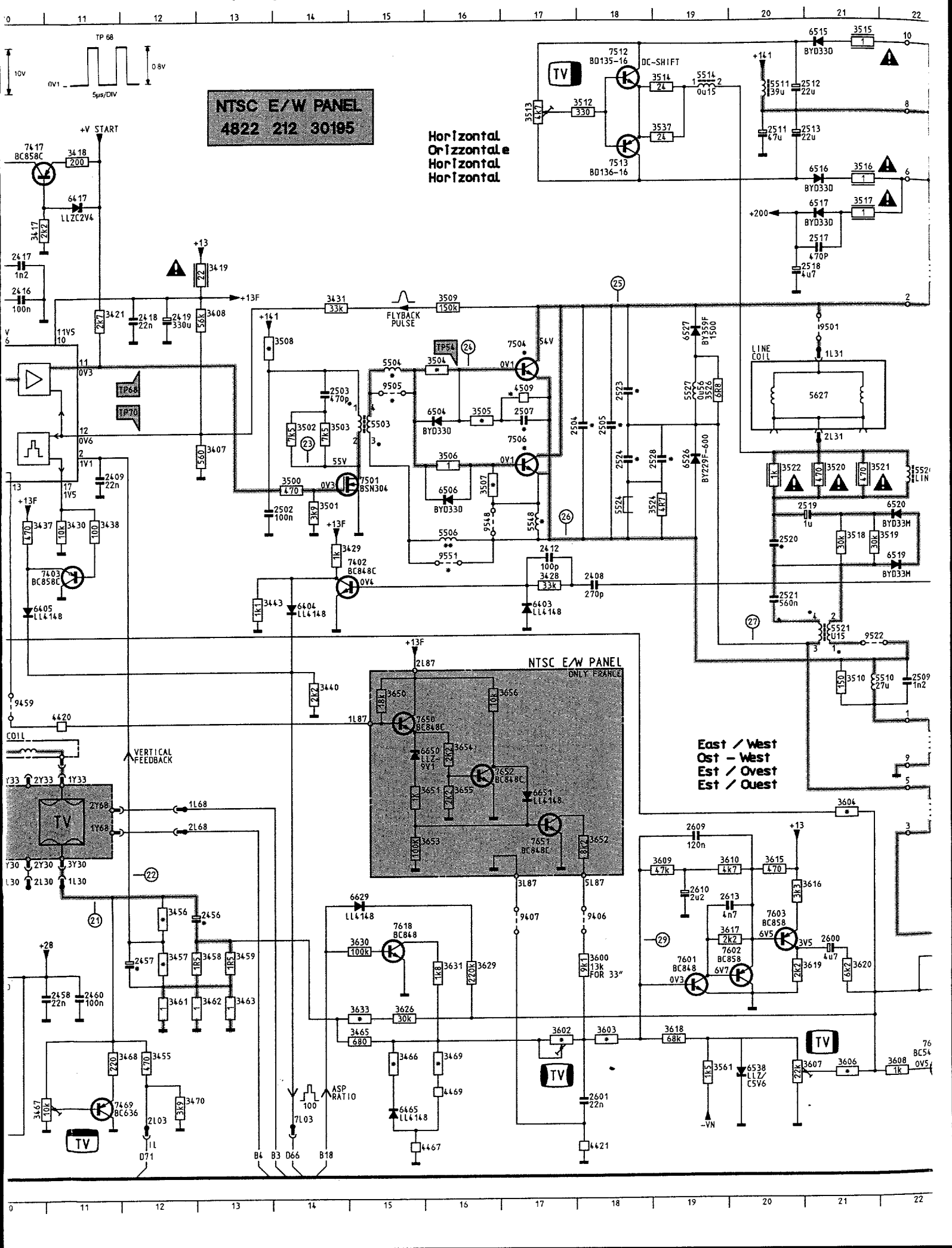
Synchronization / Synchronisierung / Synchronisation

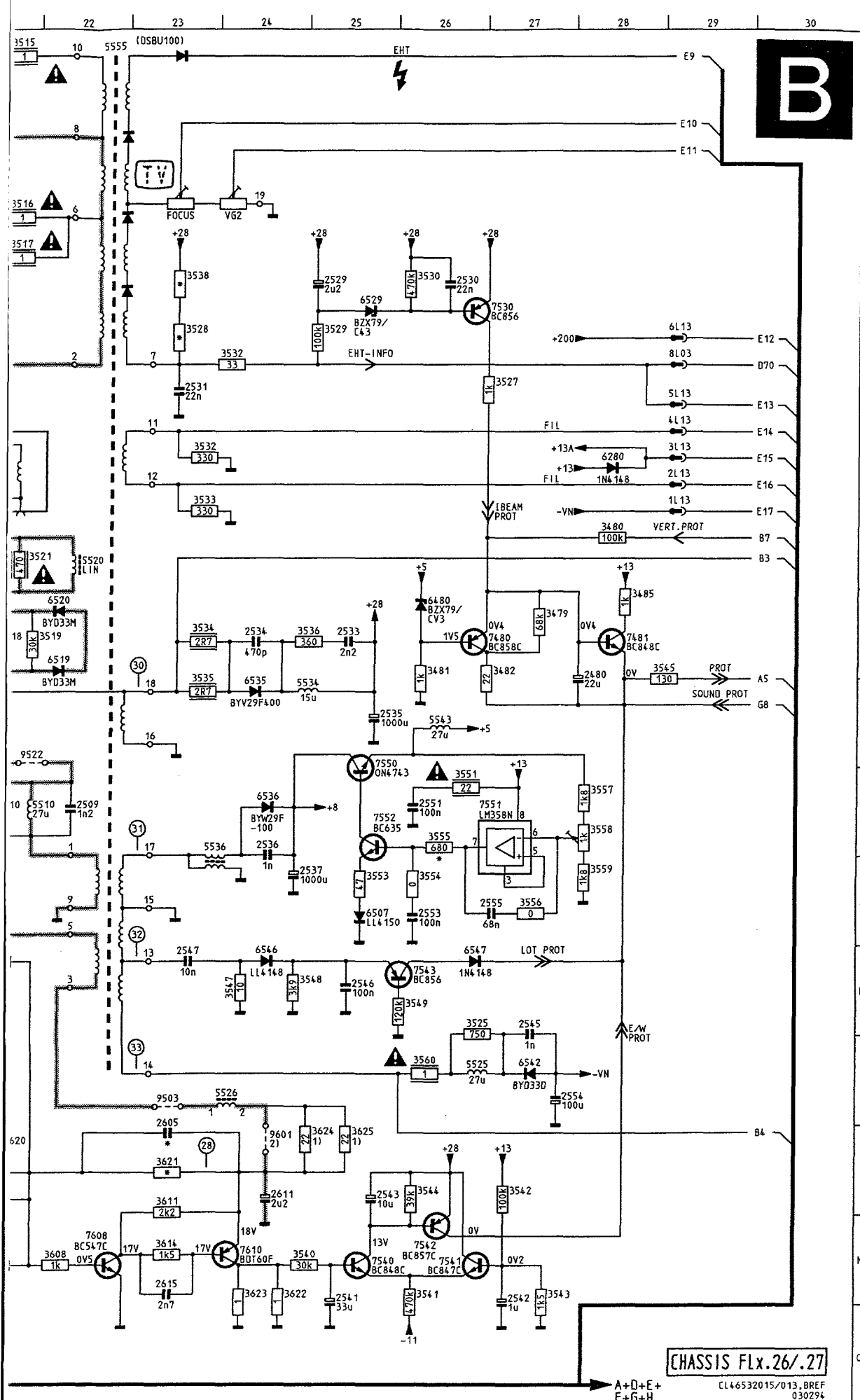


REMARKS/REMARQUES/ANMERKUNGEN/NOTE

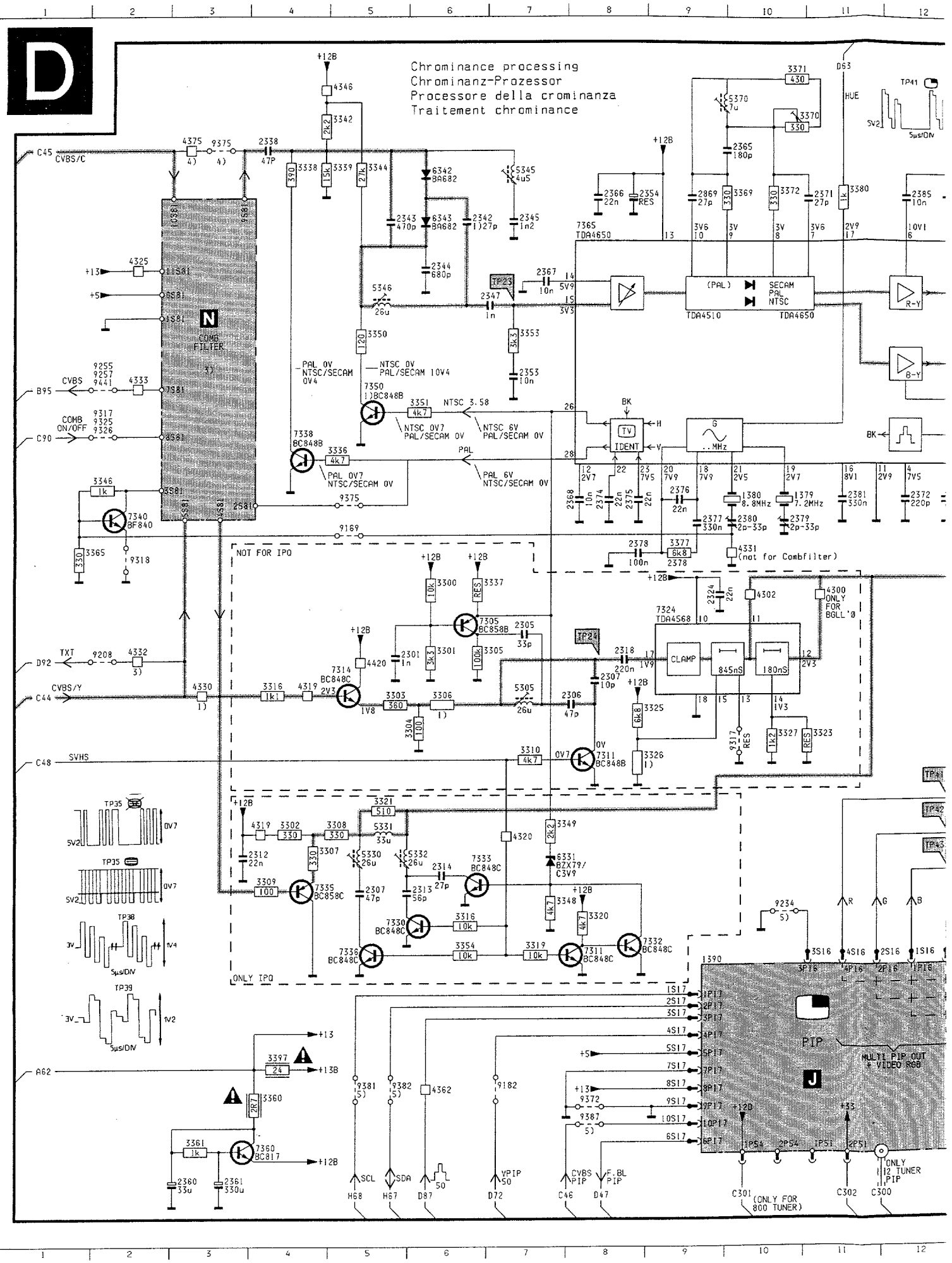
*	25"	28"	29"	33"
2456	470u	470u	1000u	680u
2457	1u5	1u5	1u	1u5
2504	270p	560p	-	560p
2505	270p	680p	330p	680p
2507	-	-	220n	-
2520	390n	470n	560n	470n
2523	8n2	8n2	11n	8n2
2524	27n	27n	15n	27n
2528	-	-	12n	-
2603	68n	47n	68n	100n
2605	1n5	2n7	2n7	2n2
2606	-	-	-	100n
3409	56k	510k	560k	560k
3411	100k	91k	75k	120k
3420	3M9	3M9	820k	3M9
3422	1M2	1M2	1M3	1M5
3423	820k	820k	1M1	1M
3456	120k	120k	120k	130k
3457	8k2	8k2	8k2	9k1
3460	270	270	390	270
3466	1k5	2k7	-	4k3
3469	1k	2k7	-	4k3
3404	1R2	1	1	1
3505	33	33	33	47
3506	1R2	1	1	1
3507	33	33	-	47
3508	1k8	1k8	1k8	1k5
3528	1k2	1k2	1k	1k2
3538	12k	12k	13k	12k
3601	100k	100k	100k	150k
3602	10k	10k	22k	10k
3603	15k	18k	10k	20k
3603 (FRANCE)	12k	12k	10k	15k
3604	130k	160k	120k	180k
3605	13k	13k	4k7	24k
3606	33k	33k	15k	22k
3621	-	-	160k	-
3632	100	100	100	15k
3633	240k	100k	82k	200k
4509	-	-	+	-
5504	-	-	0u82	-
5506	-	-	0u82	-
5548	-	-	+	-
7504	ON4673	ON4673	-	ON4673
7506	ON4673	ON4673	2SC4288A	ON4673
9505	+	+	-	+
9548	+	+	-	+
9551	+	+	-	+

FLx.26/.27 (4:3)

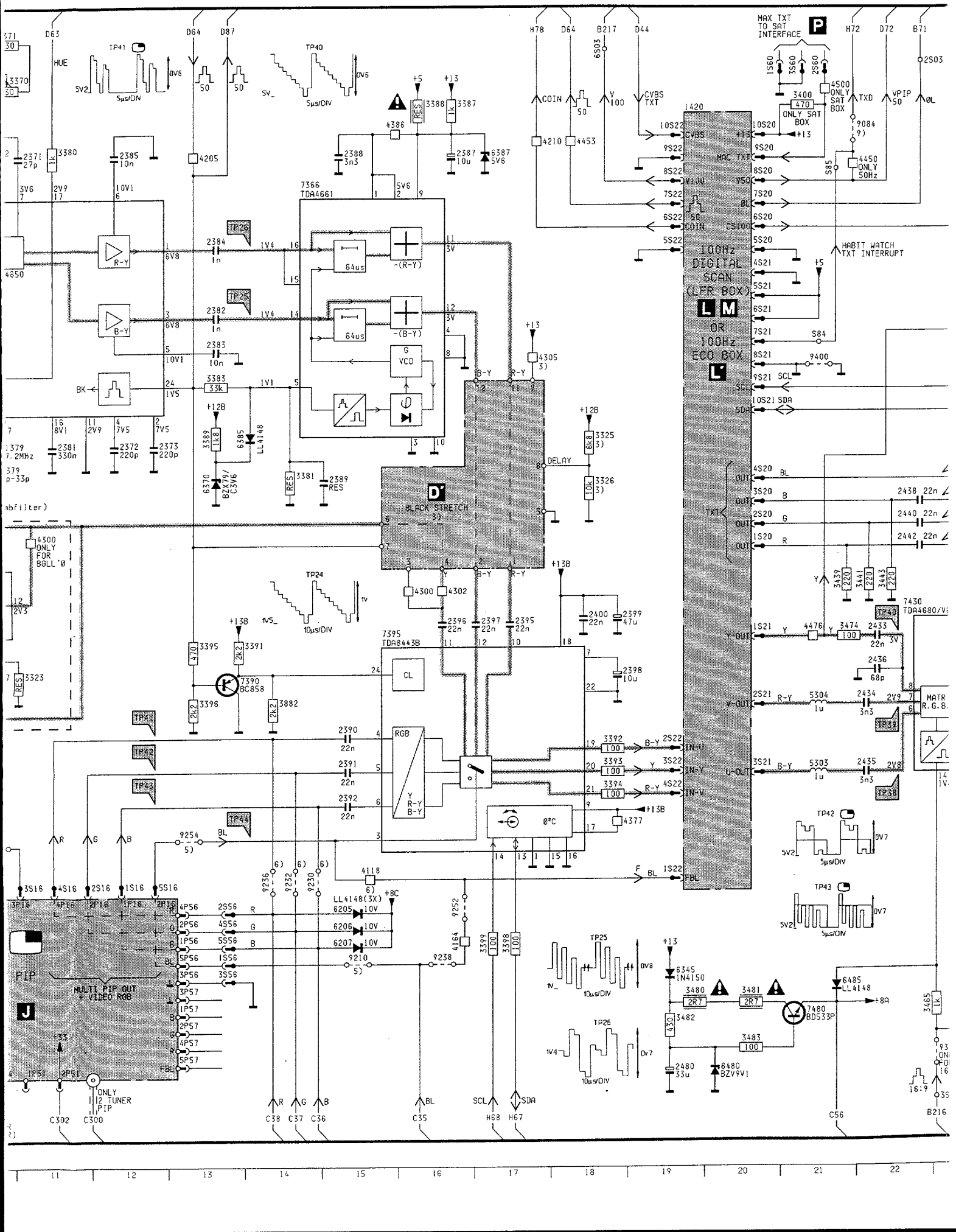

NTSC E/W PANEL
4822 212 30195
Horizontal
Orizzontale
Horizontal
Horizontal
+V START
FLYBACK PULSE
LINE COIL
DC-SHIFT
NTSC E/W PANEL
ONLY FRANCE
East / West
Ost - West
Est / Ovest
Est / Ouest
VERTICAL FEEDBACK
ASP RATIO
TV

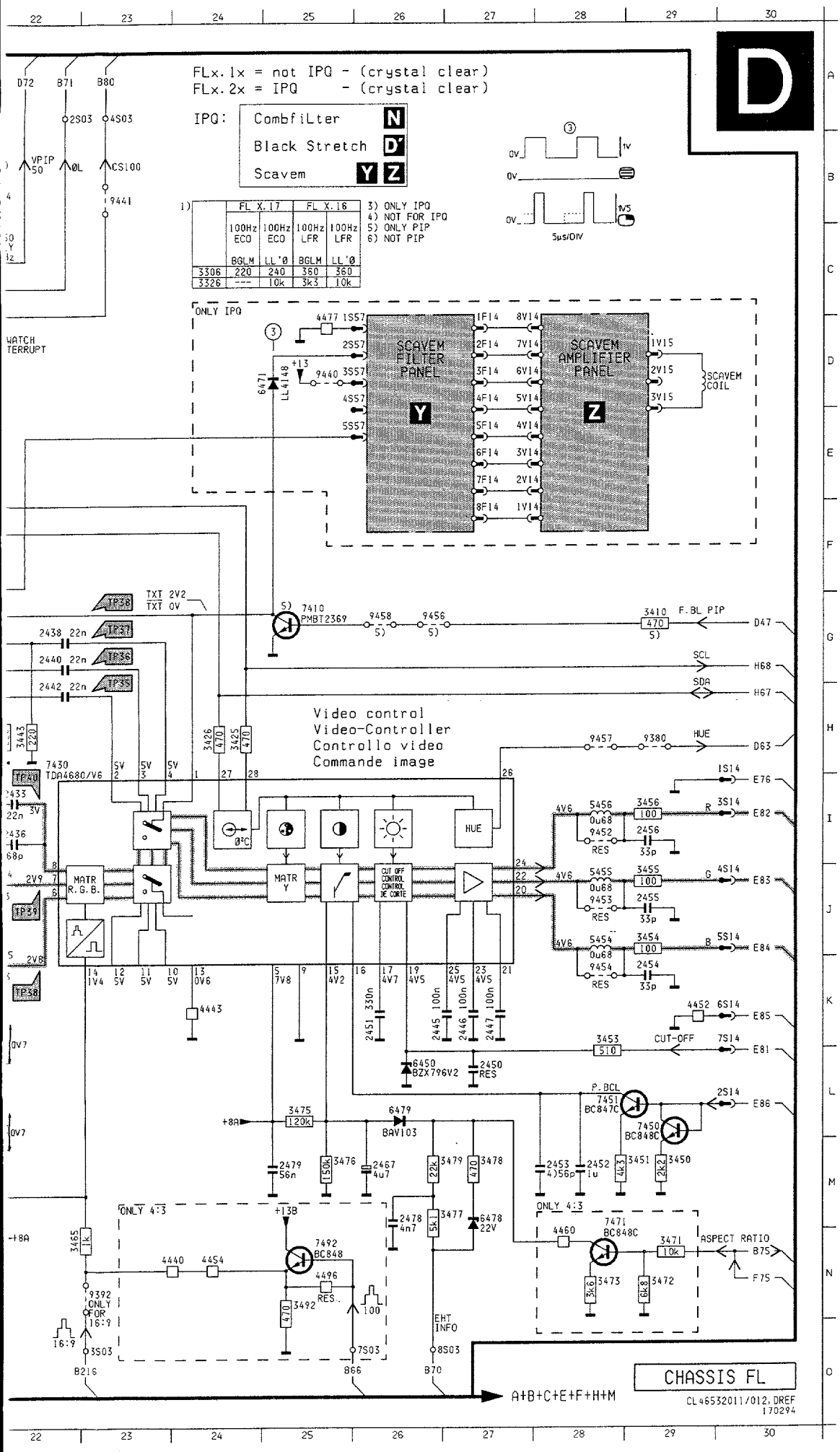


	2401	F 6	3458	L13	4410	H 7
	2402	D 6	3459	L13	4412	H 7
	2403	D 8	3460	N10	4420	I 11
	2404	C 6	3461	M12	4421	O18
A	2405	D 6	3462	M13	4467	O15
	2406	C 9	3463	M13	4469	N16
	2408	H18	3465	N15	4509	E17
	2409	F11	3466	N15	5503	F15
	2410	I 7	3467	N10	5504	E15
	2411	H 8	3468	N11	5506	G16
	2412	G17	3469	N16	5510	I21
	2415	G 9	3470	N12	5511	A20
B	2416	D10	3473	M10	5514	A19
	2417	C10	3479	G27	5520	F22
	2418	D12	3480	F28	5521	H21
	2419	D12	3481	G26	5524	G18
	2450	L 5	3482	G27	5525	L26
	2451	L 5	3483	F 5	5526	L24
	2452	M10	3484	F 5	5527	E19
	2455	K 6	3485	F28	5534	H25
C	2456	L13	3500	F14	5536	I23
	2457	M12	3501	G14	5543	H26
	2458	M11	3502	F14	5548	G17
	2459	L10	3503	F14	5555	A22
	2460	M11	3504	E16	5627	E21
	2480	G28	3505	E16	6280	E28
	2502	G14	3506	F16	6403	H17
D	2503	E14	3507	F16	6404	H14
	2504	F18	3508	D14	6405	H10
	2505	F18	3509	D16	6417	C11
	2507	E17	3510	I21	6440	E 4
	2509	I22	3512	A18	6441	E 4
	2511	B20	3513	B17	6451	N 9
	2512	A20	3514	A19	6452	M10
	2513	B20	3515	A21	6465	O15
E	2517	C21	3516	B21	6480	G26
	2518	D20	3517	C21	6504	E16
	2519	G21	3518	G21	6506	F16
	2520	G20	3519	G21	6507	J25
	2521	H20	3520	F21	6515	A21
	2523	E18	3521	F21	6516	B21
	2524	F18	3522	F20	6517	C21
	2528	F19	3524	G19	6519	G22
F	2529	C25	3525	K26	6520	G22
	2530	C26	3526	E19	6526	F19
	2531	D23	3527	D27	6527	D19
	2533	G25	3528	D23	6529	C25
	2534	G24	3529	D25	6535	H24
	2535	H25	3530	C26	6536	I24
	2536	I24	3532	E23	6538	N20
G	2537	J24	3532	D24	6542	L27
	2541	N25	3533	F23	6546	K24
	2542	N27	3534	G23	6547	K26
	2543	M25	3535	H23	6629	L15
	2545	K27	3536	G25	6650	J15
	2546	K25	3537	B19	6651	J17
	2547	K23	3538	C23	7400	D 6
	2551	I26	3540	N25	7402	G14
H	2553	J26	3541	N26	7403	G11
	2554	L27	3542	M27	7407	H 6
	2555	J27	3543	N27	7417	B10
	2600	L21	3544	M26	7444	C 5
	2601	N18	3545	G29	7445	D 4
	2603	I 9	3547	K24	7450	K 6
	2605	M23	3548	K24	7451	K 5
I	2606	I10	3549	K26	7469	N11
	2609	K19	3551	I26	7480	G27
	2610	L19	3553	J25	7481	G28
	2611	M24	3554	J26	7501	F15
	2613	L20	3555	I26	7504	E17
	2615	N23	3556	J27	7506	F17
	3402	D 7	3557	I28	7512	A18
J	3403	D 8	3558	I28	7513	B18
	3404	D 5	3559	J28	7530	C27
	3405	C 9	3560	L26	7540	N25
	3406	D 9	3561	N19	7541	N26
	3407	F13	3600	L18	7542	N26
	3408	D13	3601	H 9	7543	K26
	3409	H 7	3602	N17	7550	I25
	3410	B10	3603	N18	7551	I26
K	3411	H 7	3604	K21	7552	I25
	3413	G 9	3605	I10	7601	M19
	3414	G 6	3606	N21	7602	M20
	3415	G 5	3607	N20	7603	L20
	3416	G 9	3608	N22	7608	N22
	3417	C10	3609	K19	7610	N24
	3418	B11	3610	K20	7616	H 5
	3419	C13	3611	M23	7618	L15
L	3420	H 9	3614	N23	7650	J15
	3421	D11	3615	K20	7651	K17
	3422	H 7	3616	L20	7652	J16
	3423	G 7	3617	L20	9406	L18
	3424	G 8	3618	N19	9407	L17
	3425	B 9	3619	M20	9459	I10
	3426	E 4	3620	N21	9473	C 4
M	3427	C 9	3621	M23	9501	D21
	3428	H17	3622	N24	9503	L23
	3429	G14	3623	N24	9505	E15
	3430	G11	3624	M25	9522	H21
	3431	D14	3625	M25	9548	G16
	3437	G10	3626	M15	9551	G16
	3438	G11	3627	H 5	9601	M24
	3439	E 4	3628	H 4		
N	3440	I14	3629	M16		
	3441	E 5	3630	L15		
	3442	E 5	3631	M16		
	3443	H13	3632	I 9		
	3444	D 4	3633	M15		
	3445	D 3	3634	H 5		
	3446	C 4	3650	I15		
	3450	K 5	3651	J15		
O	3451	K 5	3652	K18		
	3452	L10	3653	K15		
	3455	N12	3654	J16		
	3456	L12	3655	J16		
	3457	L12	3656	I16		

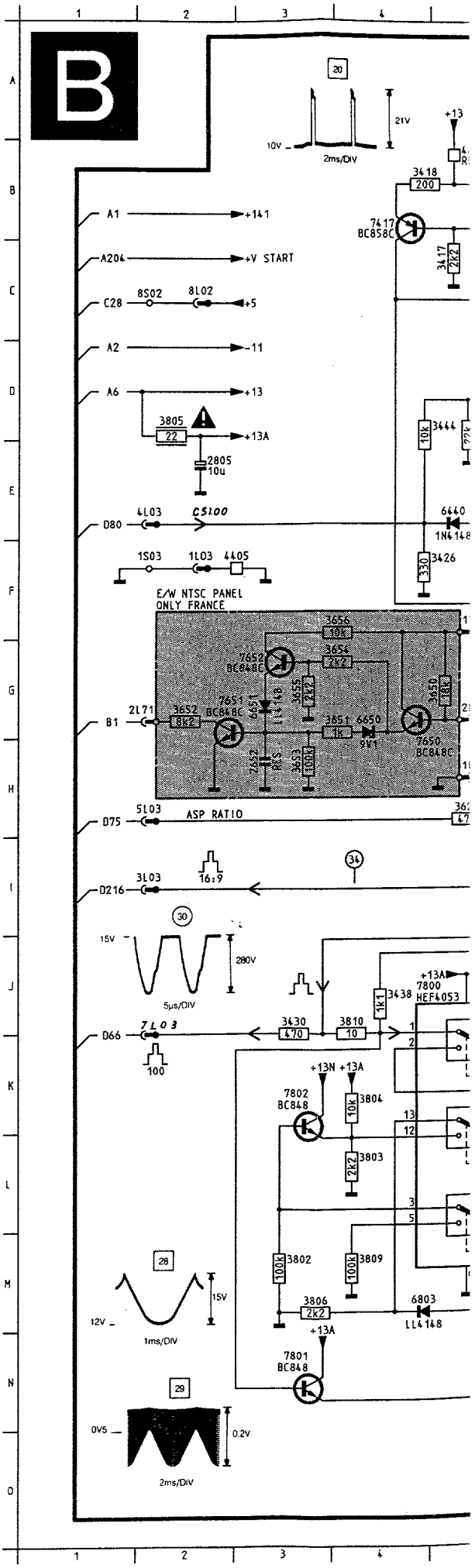

D
Chrominance processing
Chrominanz-Prozessor
Processore della crominanza
Traitement chrominance
N
COMB FILTER
J
PIP
NOT FOR IPQ
ONLY IPQ
CLAMP
845nS
180nS
TDA4650
TDA4510
TDA4568
IDENT
SECAM
PAL
NTSC
(PAL)
R-Y
B-Y
BK
HUE
CVBS/C
CVBS/Y
SVHS
TXT
COMB ON/OFF
PAL 0V NTSC/SECAM 0V4
NTSC 0V PAL/SECAM 10V4
NTSC 3.58
NTSC 0V7 PAL/SECAM 0V
NTSC 6V PAL/SECAM 0V
PAL 0V7 NTSC/SECAM 0V
PAL 6V NTSC/SECAM 0V
(not for Combfilter)
ONLY FOR BGLL'Ø
MULTI PIP OUT + VIDEO RGB
ONLY 12 TUNER PIP
(ONLY FOR 800 TUNER)
SCL
SDA
YPIP
CVBS PIP
F.BL PIP

Traitement vidéo

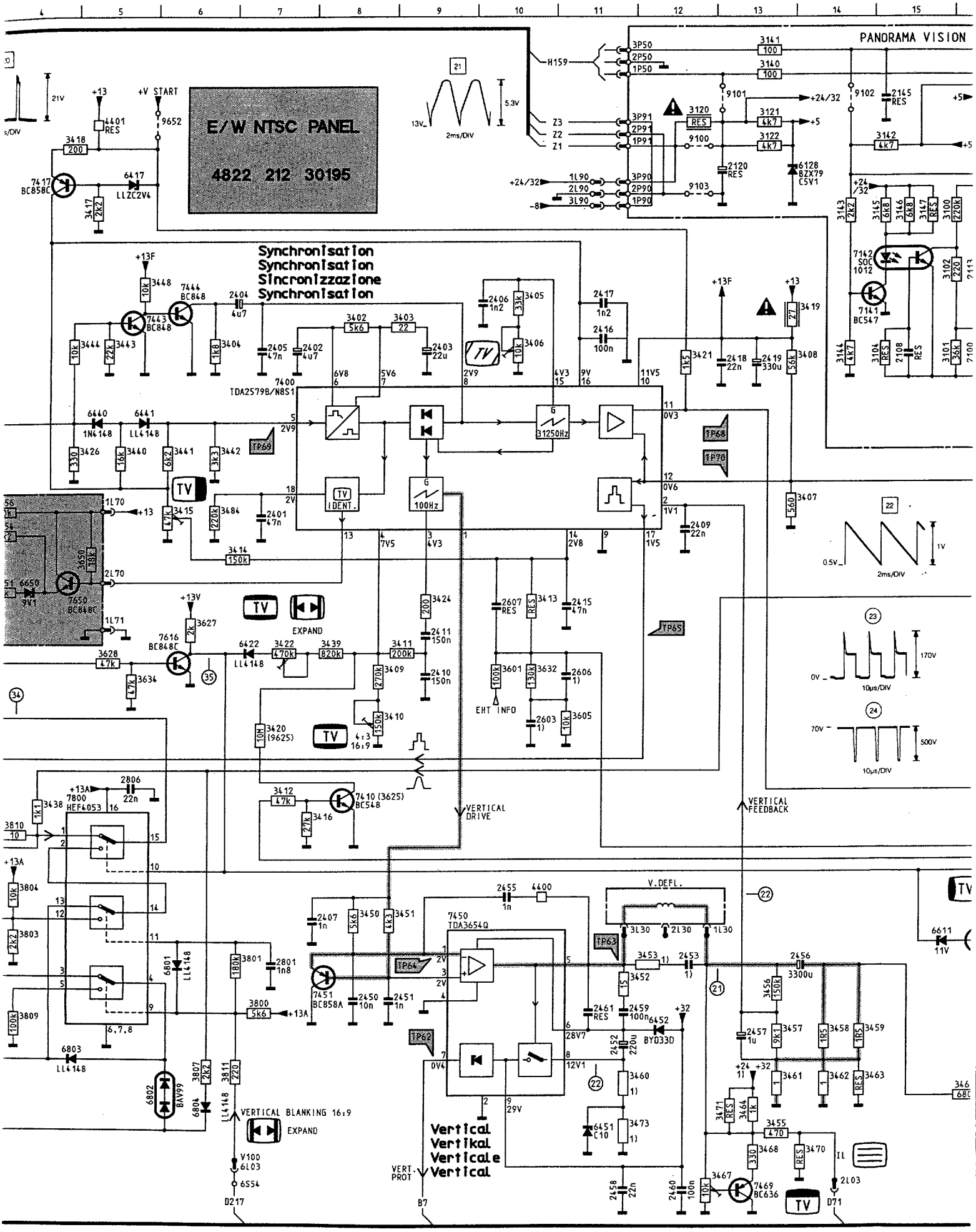


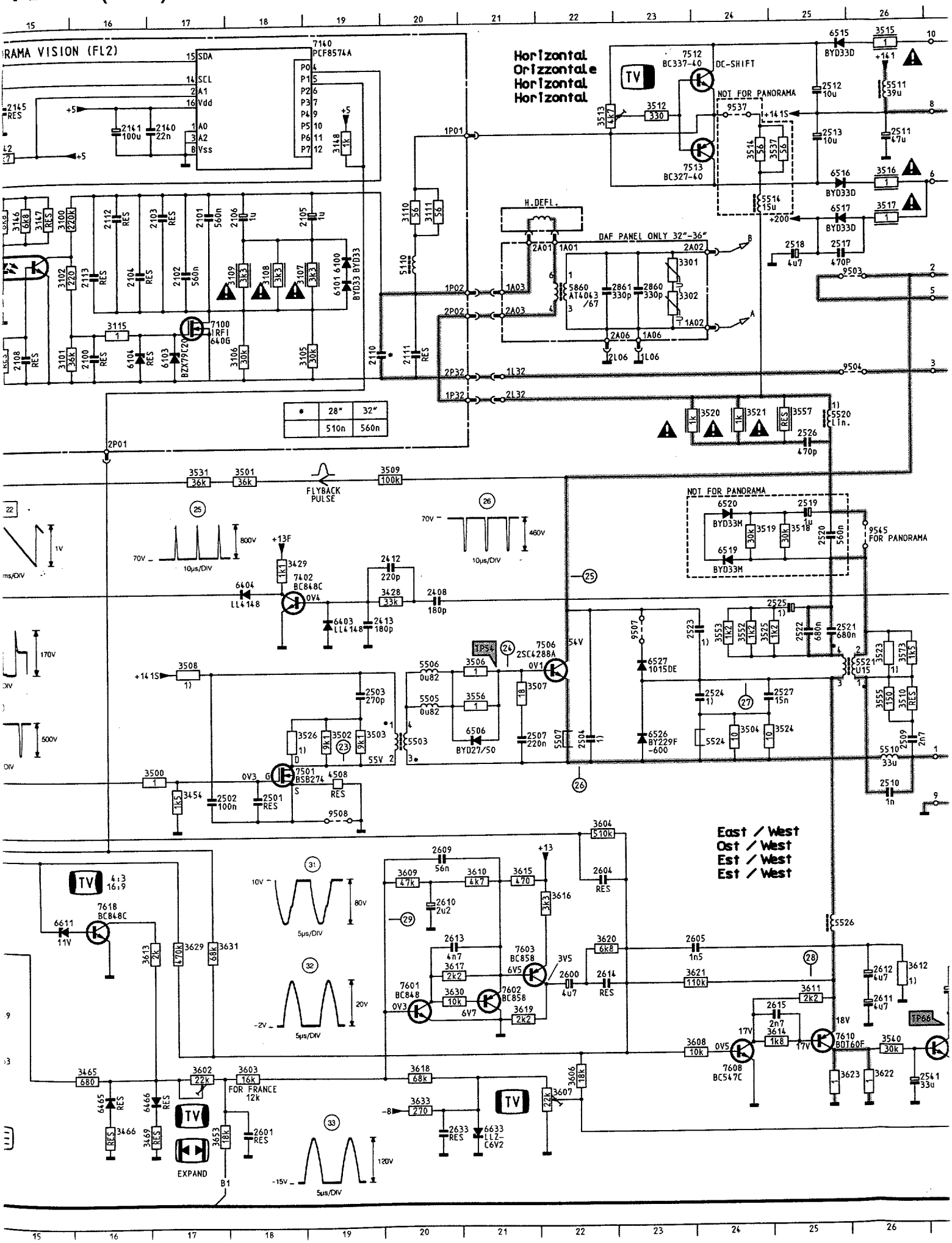


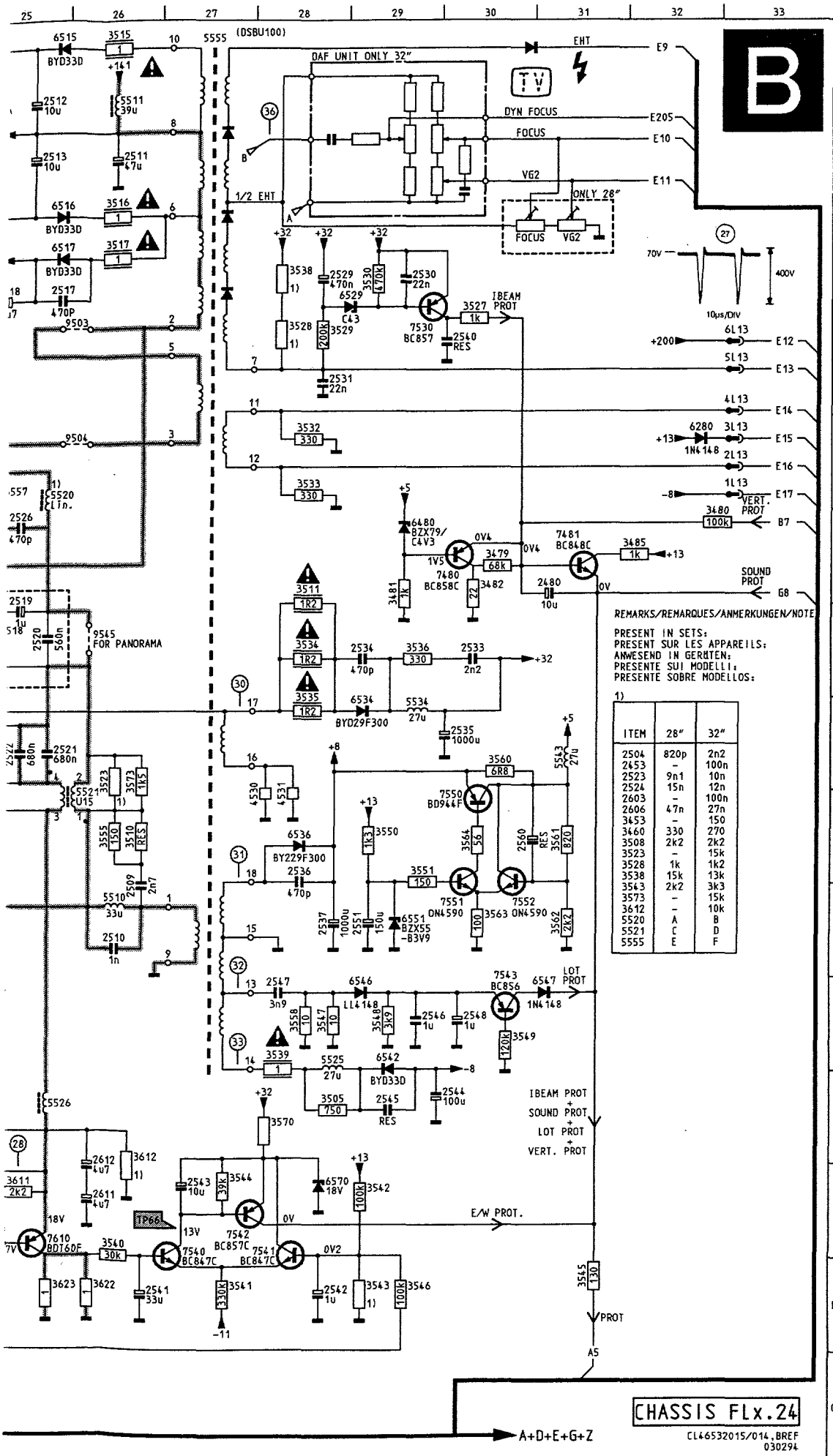
	1379	F10	3370	B10	7332	L 8
	1380	F10	3371	A10	7333	K 6
	1390	L 9	3372	B10	7335	K 4
	1420	B19	3377	G 9	7336	L 5
A	2301	H 5	3380	B11	7338	F 4
	2305	H 7	3381	G14	7340	G 2
	2306	I 8	3383	E13	7350	E 5
	2307	I 8	3387	B16	7360	N 4
	2307	K 5	3388	B16	7365	C 8
	2312	K 3	3389	F13	7366	C14
	2313	K 6	3391	I13	7390	I13
	2314	K 6	3392	J18	7395	I15
B	2318	H 8	3393	J18	7410	G25
	2324	H 9	3394	K18	7430	H22
	2338	B 4	3395	I13	7450	L29
	2342	C 6	3396	J13	7451	L28
	2343	C 5	3397	M 4	7471	M28
	2344	C 6	3398	M17	7480	N21
	2345	C 7	3399	M17	7492	N25
	2347	D 7	3400	B21	9084	B21
C	2353	E 7	3410	G29	9189	G 5
	2354	C 8	3425	H24	9182	N 7
	2360	O 3	3426	H24	9208	H 2
	2361	O 3	3439	H21	9210	M15
	2365	B10	3441	H22	9230	L14
	2366	C 8	3443	H22	9232	L14
	2367	D 7	3450	M29	9234	K10
D	2368	F 8	3451	M29	9236	L14
	2371	C11	3453	K28	9238	M16
	2372	F12	3454	J29	9252	L16
	2373	F12	3455	J29	9254	K13
	2375	F 8	3456	I29	9255	E 2
	2376	F 9	3465	N22	9317	E 2
	2377	G 9	3471	N29	9317	I10
	2378	G 8	3472	N29	9318	G 2
E	2378	G 9	3473	N28	9372	N 8
	2379	G10	3474	I21	9375	B 3
	2380	G10	3475	L25	9375	F 5
	2381	F11	3476	M25	9380	H29
	2382	E13	3477	M26	9381	N 5
	2383	E13	3478	M27	9382	N 5
	2384	D13	3479	M26	9387	N 8
F	2385	C12	3480	M19	9392	N23
	2387	C16	3481	M20	9400	E21
	2388	C15	3482	N19	9440	D25
	2389	G15	3483	N20	9441	B23
	2390	J15	3492	N25	9452	I28
	2391	J15	3882	J14	9453	J28
	2392	K15	4118	L15	9454	K28
	2395	I17	4164	M16	9456	G26
G	2396	I16	4205	C13	9457	H28
	2397	I17	4210	B17	9458	G26
	2398	I18	4300	H11		
	2399	I18	4300	H16		
	2400	I18	4302	H10		
	2433	I22	4302	H16		
	2434	J22	4305	E17		
	2435	J22	4319	I 4		
H	2436	I22	4319	J 4		
	2438	G22	4320	K 7		
	2440	G22	4325	C 2		
	2442	H22	4330	I 3		
	2445	K26	4331	G10		
	2446	K27	4332	H 2		
	2447	K27	4333	E 2		
I	2450	L27	4346	A 5		
	2451	K26	4362	N 6		
	2452	M28	4375	B 3		
	2453	M28	4377	K18		
	2454	K29	4386	B15		
	2455	J29	4420	H 5		
	2456	I29	4440	N24		
	2467	M26	4443	K24		
J	2478	M26	4450	C22		
	2479	M25	4452	K29		
	2480	N19	4453	B18		
	2869	C 9	4454	N24		
	3300	G 6	4460	N28		
	3301	H 6	4476	I21		
	3302	J 4	4477	D25		
K	3303	I 5	4496	N25		
	3304	I 6	4500	B21		
	3305	H 6	5303	K21		
	3306	I 6	5304	J21		
	3307	K 4	5305	I 7		
	3308	J 5	5330	K 5		
	3309	K 4	5331	J 5		
	3310	I 7	5332	K 6		
L	3316	I 4	5345	B 7		
	3316	L 6	5346	D 5		
	3319	L 7	5370	A10		
	3320	K 8	5454	J28		
	3321	J 5	5455	J28		
	3323	I11	5456	I28		
	3325	F18	6205	L15		
M	3325	I 8	6206	M15		
	3326	G18	6207	M15		
	3326	I 8	6331	K 7		
	3327	I10	6342	B 6		
	3336	F 5	6343	C 6		
	3337	G 6	6345	M19		
	3338	B 4	6370	G13		
N	3339	B 5	6385	F13		
	3342	B 5	6387	C17		
	3344	B 5	6450	L26		
	3346	F 2	6471	D25		
	3348	K 7	6478	M27		
	3349	J 7	6479	L26		
	3350	D 5	6480	N20		
	3351	E 6	6485	M21		
	3353	D 7	7305	H 6		
O	3354	L 6	7311	J 8		
	3360	N 4	7311	L 8		
	3361	N 3	7314	H 5		
	3365	G 1	7324	H 9		
	3369	B10	7330	L 5		


B
20
10V
21V
2ms/DIV
+13
3418
200
7417
BC858C
3417
2K2
A1
+141
A204
+V START
C28
8S02
8L02
+5
A2
-11
A6
+13
3805
22
+13A
2805
10u
10k
3444
D80
4L03
CS100
6440
1N4148
3426
330
1S03
1L03
4405
E/W NTSC PANEL
ONLY FRANCE
3656
10K
7652
BC848C
3654
2K2
3655
2K2
3650
10K
2L71
B1
3652
8K2
7651
BC848C
6651
LL4148
3651
1K
6650
SV1
7650
BC848C
2652
RES
3653
100K
5L03
D75
ASP RATIO
3L03
16:9
34
D216
30
15V
280V
5µs/DIV
1K1
3438
+13A
7800
HEF4053
7L03
D66
3430
470
3810
10
100
+13N +13A
7802
BC848
10k
3804
2k2
3803
28
12V
15V
1ms/DIV
100k
3802
100k
3809
3806
2K2
6803
LL4148
+13A
7801
BC848
29
0V5
0.2V
2ms/DIV

Synchronization / Synchronisierung / Synchronisation

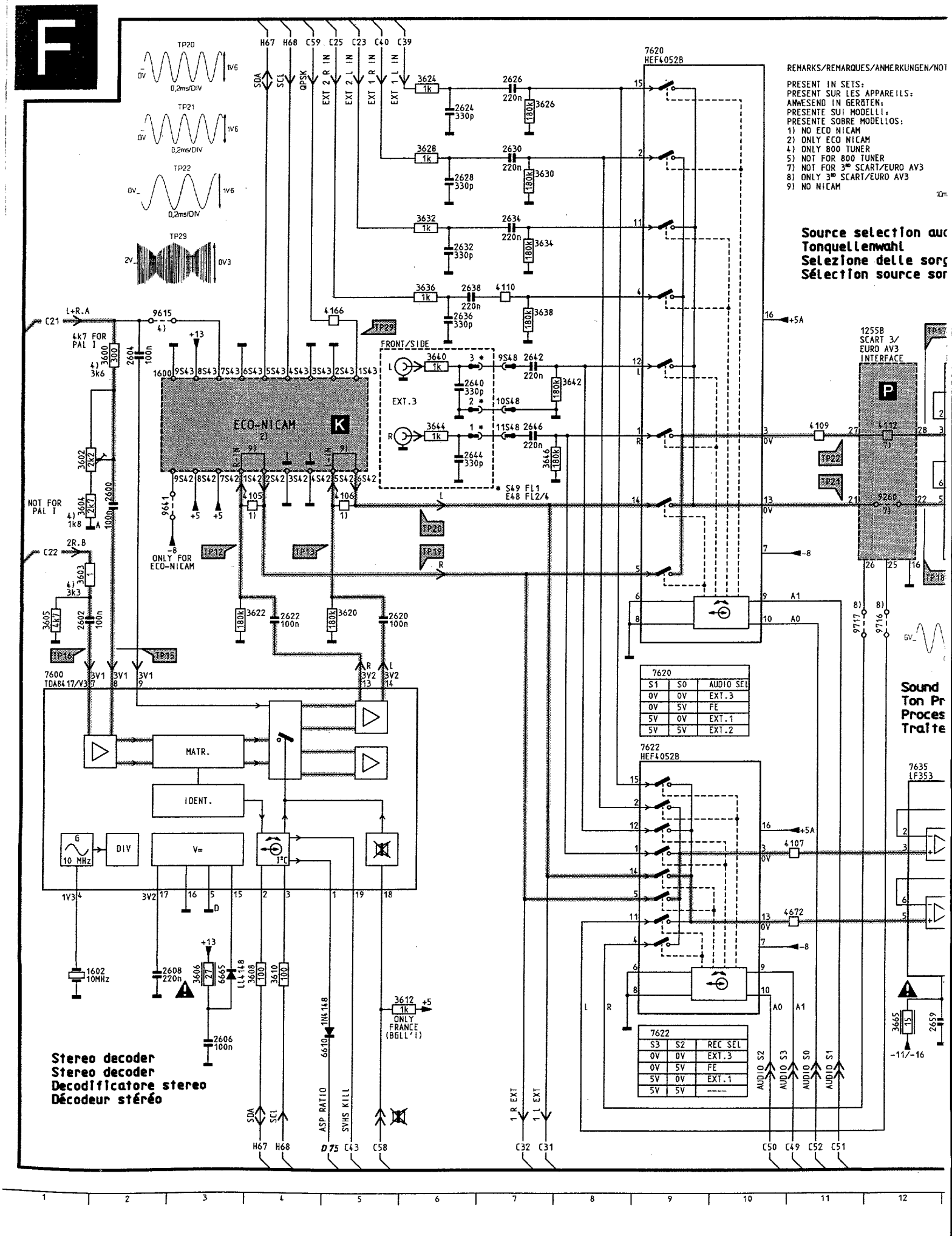



RAMA VISION (FL2)
7140 PCF8574A
SDA
SCL
A1
Vdd
A0
A2
Vss
P04
P15
P26
P37
P49
P5 10
P6 11
P7 12
Horizontal
Orizzontale
Horizontal
Horizontal
7512 BC337-40
DC-SHIFT
NOT FOR PANORAMA
7513 BC327-40
BYD33D
H.DEFL.
DAF PANEL ONLY 32"-36"
5860 AT4043 /67
7100 IRFI 640G
BZX79C20
BYD33
FLYBACK PULSE
7402 BC848C
LL4148
7506 2SC4288A
7501 BSB274
6527 1015DE
6526 BY229F -600
BYD27/50
FOR PANORAMA
East / West
Ost / West
Est / West
Est / West
7618 BC848C
7603 BC858
7601 BC848
7602 BC858
7610 BDT60F
7608 BC547C
FOR FRANCE 12k
EXPAND
LLZ-C6V2
28" 32"
510n 560n



ITEM	28"	32"
2504	820p	2n2
2453	-	100n
2523	9n1	10n
2524	15n	12n
2603	-	100n
2606	47n	27n
3453	-	150
3460	330	270
3508	2k2	2k2
3523	-	15k
3528	1k	1k2
3538	15k	13k
3543	2k2	3k3
3573	-	15k
3612	-	10k
5520	A	B
5521	C	D
5555	E	F

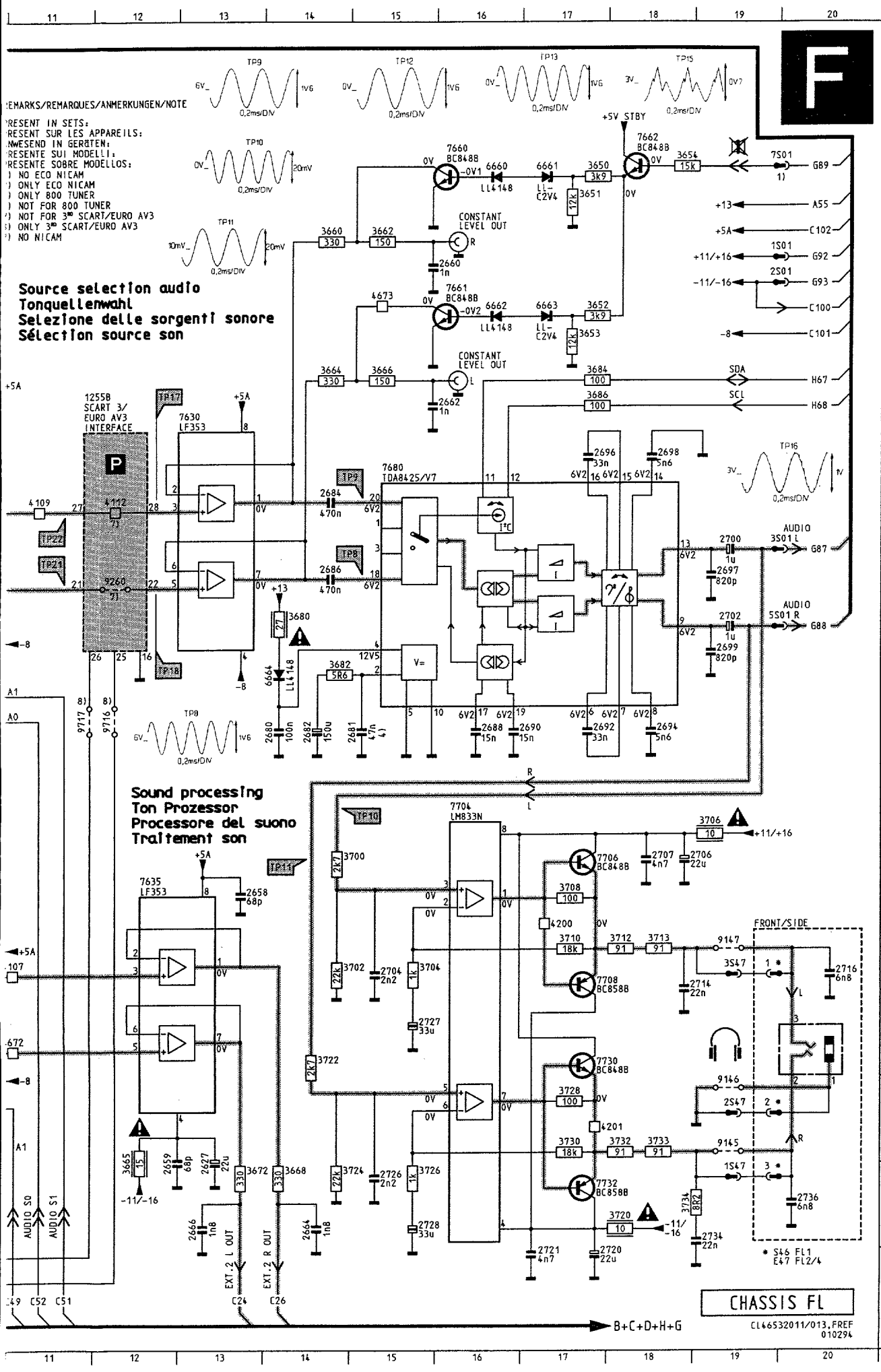
	2100	D16	3110	C20	3538	C28	6466	N16
	2101	C17	3111	C20	3539	K28	6480	F29
	2102	C17	3115	D16	3540	M26	6506	I21
	2103	C17	3121	B13	3541	N27	6515	A25
A	2104	C16	3122	B13	3542	M29	6516	B25
	2105	C19	3140	A13	3543	N29	6517	C25
	2106	C18	3141	A13	3544	M27	6519	G24
	2108	D15	3142	B15	3545	N31	6520	F24
	2110	D19	3143	C14	3546	N29	6526	I23
	2111	D20	3144	D14	3547	K28	6527	I23
	2112	C16	3145	C15	3548	K29	6529	C29
	2113	C16	3146	C15	3549	K30	6534	H29
B	2120	B13	3147	C15	3550	I29	6536	I28
	2140	B17	3148	B19	3551	I29	6542	K29
	2141	B16	3301	C23	3552	H24	6546	K29
	2145	A15	3302	D23	3553	H24	6547	K31
	2401	G 7	3402	D 8	3555	I26	6551	J29
	2402	D 7	3403	D 9	3556	I21	6570	M28
	2403	D 9	3404	D 6	3557	E25	6611	L15
	2404	D 7	3405	D10	3558	K28	6633	N21
C	2405	D 7	3406	D10	3560	H30	6650	G 4
	2406	D10	3407	F14	3561	I31	6651	G 3
	2407	L 8	3408	D14	3562	J31	6801	L 6
	2408	H20	3409	H 8	3563	J30	6802	N 5
	2409	G12	3410	I 8	3564	I30	6803	M 4
	2410	I 9	3411	H 9	3570	L28	6804	N 6
	2411	H 9	3412	J 7	3573	H26	7100	D17
D	2412	G20	3413	G10	3601	H10	7140	A19
	2413	H19	3414	G 7	3602	N17	7141	D15
	2415	H11	3415	F 6	3603	N18	7142	C14
	2416	D11	3416	J 7	3604	K22	7400	E 7
	2417	D11	3417	C 5	3605	I11	7402	G18
	2418	E13	3418	B 4	3606	N22	7410	J 8
	2419	E13	3419	D14	3607	N22	7417	B 4
	2450	M 8	3420	I 7	3608	M23	7443	D 5
E	2451	M 8	3421	D12	3609	K20	7444	D 6
	2452	M11	3422	H 7	3610	K21	7450	L 9
	2453	L12	3424	G 9	3611	M25	7451	L 8
	2455	K10	3426	F 5	3612	L26	7469	O13
	2456	L14	3428	H20	3613	L16	7480	F30
	2457	M13	3429	G18	3614	M25	7481	F31
	2458	O11	3430	J 3	3615	K21	7501	J18
	2459	M11	3438	J 4	3616	K22	7506	H22
F	2460	O12	3439	H 8	3617	L20	7512	A24
	2461	M11	3440	F 5	3618	N20	7513	B24
	2480	F31	3441	F 6	3619	M21	7530	D29
	2501	J18	3442	F 6	3620	L22	7540	M27
	2502	J17	3443	D 5	3621	M23	7541	M28
	2503	I19	3444	D 5	3622	N26	7542	M27
	2504	I22	3448	D 5	3623	N25	7543	K30
G	2507	I21	3450	K 8	3625	J 8	7550	I30
	2509	J26	3451	K 9	3627	H 6	7551	J30
	2510	J26	3452	L11	3628	H 5	7552	J30
	2511	B26	3453	L12	3629	L17	7601	M20
	2512	A25	3454	J17	3630	M20	7602	M21
	2513	B25	3455	N13	3631	L17	7603	L21
	2517	C25	3456	L13	3632	H10	7608	N24
H	2518	C25	3457	M13	3633	N20	7610	M25
	2519	G25	3458	M14	3634	H 5	7616	H 6
	2520	G25	3459	M14	3650	G 5	7618	L16
	2521	H25	3460	M11	3651	G 4	7650	G 4
	2522	H25	3461	M13	3652	G 2	7651	G 3
	2523	H24	3462	M14	3653	H 3	7652	G 3
	2524	I24	3463	M14	3653	O17	7800	J 4
	2525	H25	3464	N13	3654	G 4	7801	N 3
I	2526	F25	3465	N16	3655	G 3	7802	K 3
	2527	I25	3466	N16	3656	F 4	9100	B12
	2529	C28	3467	D12	3800	M 7	9101	A13
	2530	C29	3468	N13	3801	L 7	9102	A14
	2531	D28	3469	O16	3802	M 3	9103	B12
	2533	G30	3470	N14	3803	L 4	9503	D26
	2534	G29	3471	N13	3804	K 4	9504	E26
J	2535	H30	3473	N11	3805	D 2	9507	H23
	2536	I28	3479	F30	3806	M 3	9508	J19
	2537	J28	3480	F32	3807	M 6	9537	A24
	2540	D30	3481	F29	3809	M 4	9545	G26
	2541	N26	3482	F30	3810	J 4	9625	I 7
	2542	N28	3484	F 6	3811	M 6	9652	B 6
	2543	M27	3485	F32	4400	K10		
	2544	L30	3500	J17	4401	B 5		
K	2545	L29	3501	F18	4405	F 3		
	2546	K29	3502	I19	4508	J19		
	2547	K28	3503	I19	4530	I28		
	2548	K30	3504	I24	4531	I28		
	2551	J29	3505	L28	5110	C20		
	2560	I30	3506	H21	5503	I20		
	2600	M22	3507	I21	5505	I20		
L	2601	N18	3508	H17	5506	I20		
	2603	I10	3509	F20	5507	I22		
	2604	K22	3510	I26	5510	J26		
	2605	L23	3511	F28	5511	A26		
	2606	I11	3512	A23	5514	C24		
	2607	H10	3513	B22	5520	E25		
	2609	K20	3514	B24	5521	I26		
	2610	L20	3515	A26	5524	I24		
M	2611	M26	3516	B26	5525	K28		
	2612	M26	3517	C26	5526	L25		
	2613	L20	3518	G25	5534	H29		
	2614	M22	3519	G24	5543	H31		
	2615	M25	3520	E24	5555	A27		
	2633	N20	3521	E24	5860	D22		
	2652	H 3	3523	H26	6100	C19		
	2801	L 7	3524	I25	6101	D19		
N	2805	E 2	3525	H24	6103	D17		
	2806	J 5	3526	I18	6104	D16		
	2860	D23	3527	C30	6128	B14		
	2861	D22	3528	C28	6280	E32		
	3100	C15	3529	O28	6403	H19		
	3101	D15	3530	C29	6404	G18		
	3102	C15	3531	F17	6417	B 5		
	3104	D15	3532	E28	6422	H 7		
O	3105	D19	3533	E28	6440	E 5		
	3106	D18	3534	G28	6441	E 5		
	3107	C19	3535	H28	6451	N11		
	3108	C18	3536	G29	6452	M12		
	3109	C18	3537	B25	6465	N16		



7620		
S1	S0	AUDIO SEL
0V	0V	EXT.3
0V	5V	FE
5V	0V	EXT.1
5V	5V	EXT.2

7622		
S3	S2	REC SEL
0V	0V	EXT.3
0V	5V	FE
5V	0V	EXT.1
5V	5V	-----

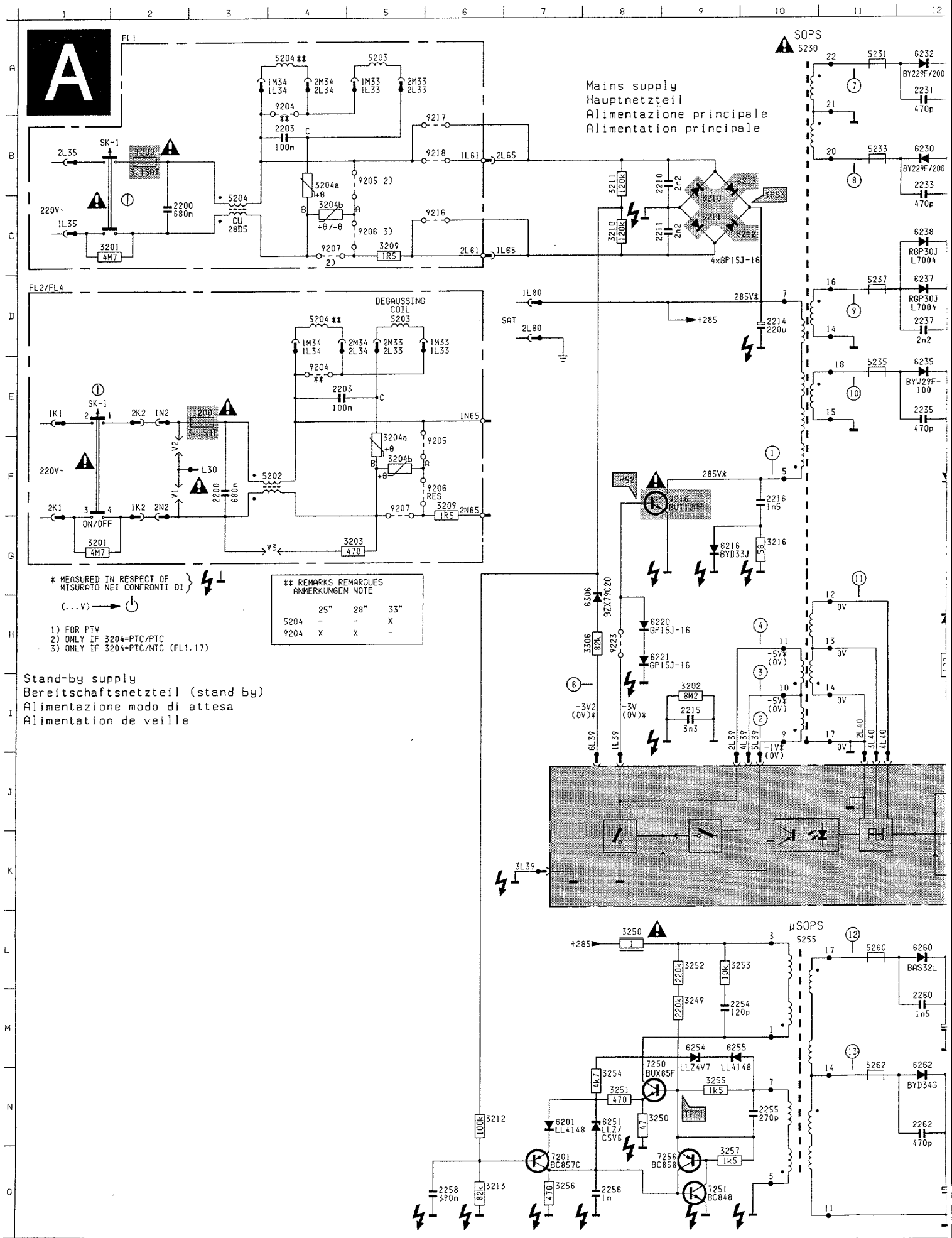
Traitement audio



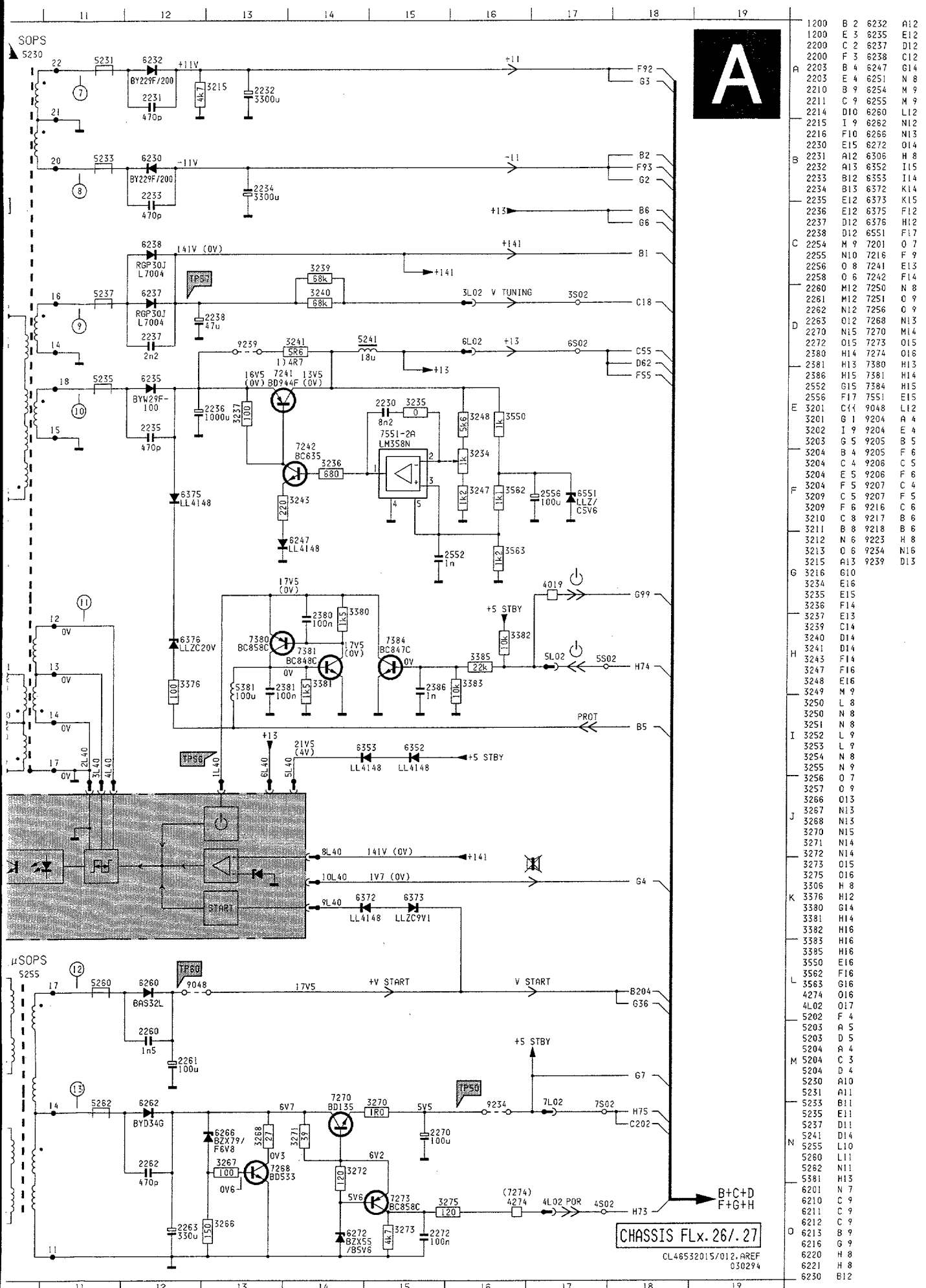
REMARKS/REMARQUES/ANMERKUNGEN/NOTE

'RESENT IN SETS:
'RESENT SUR LES APPAREILS:
:NWESEND IN GERÄTEN:
'RESENTE SUI MODELLI:
'RESENTE SOBRE MODELLOS:
) NO ECO NICAM
) ONLY ECO NICAM
) ONLY 800 TUNER
) NOT FOR 800 TUNER
') NOT FOR 3RD SCART/EURO AV3
3) ONLY 3RD SCART/EURO AV3
') NO NICAM

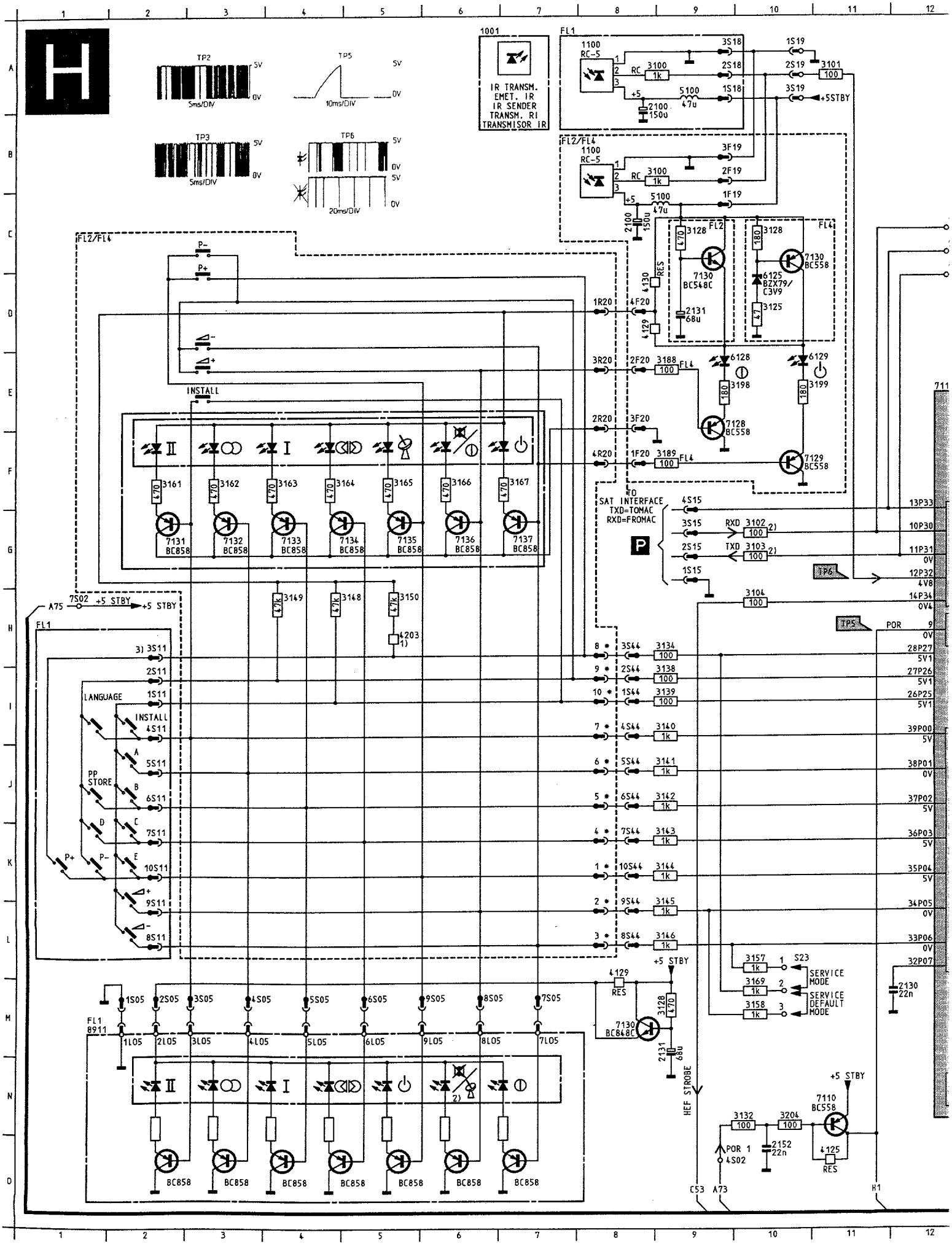
	1255	E11	4110	D 7
	1600	E 2	4112	F12
	1602	M 1	4166	D 5
	2600	G 2	4200	K17
A	2602	H 1	4201	M17
	2604	E 2	4672	L11
	2606	N 3	4673	C15
	2608	M 2	6610	N 5
	2620	H 5	6660	B16
	2622	H 4	6661	B17
	2624	B 6	6662	D16
	2626	A 7	6663	D17
B	2627	M13	6664	H14
	2628	C 6	6665	M 3
	2630	B 7	7600	I 1
	2632	D 6	7620	A 9
	2634	C 7	7622	J 9
	2636	D 6	7630	E12
	2638	D 6	7635	J12
	2640	E 6	7660	B16
C	2642	E 7	7661	C16
	2644	F 6	7662	B18
	2646	F 7	7680	E15
	2658	J13	7704	I16
	2659	M12	7706	J17
	2660	C16	7708	K17
	2662	E16	7730	L17
D	2664	N14	7732	N17
	2666	N13	9145	M19
	2680	H14	9146	M19
	2681	H15	9147	K19
	2682	H14	9260	G12
	2684	F14	9615	D 2
	2686	G14	9641	G 2
E	2688	H16	9716	H12
	2690	H16	9717	H11
	2692	H17		
	2694	H18		
	2696	E17		
	2697	G19		
	2698	E18		
	2699	H19		
F	2700	F19		
	2702	G19		
	2704	K15		
	2706	J18		
	2707	J18		
	2714	K18		
	2716	K20		
	2720	O17		
G	2721	O17		
	2726	N15		
	2727	L15		
	2728	N15		
	2734	N19		
	2736	N20		
	3600	E 2		
	3602	F 1		
H	3603	H 1		
	3604	G 1		
	3605	H 1		
	3606	M 3		
	3608	M 4		
	3610	M 4		
	3612	M 6		
I	3620	H 5		
	3622	H 3		
	3624	A 6		
	3626	B 7		
	3628	B 6		
	3630	C 7		
	3632	C 6		
	3634	C 7		
J	3636	D 6		
	3638	D 7		
	3640	E 6		
	3642	E 8		
	3644	F 6		
	3646	F 7		
	3650	B17		
K	3651	B17		
	3652	D17		
	3653	D17		
	3654	B18		
	3660	C14		
	3662	C15		
	3664	D14		
	3665	M12		
L	3666	D15		
	3668	N14		
	3672	N13		
	3680	G14		
	3682	H14		
	3684	D17		
	3686	E17		
	3700	J14		
M	3702	K14		
	3704	K15		
	3706	J19		
	3708	J17		
	3710	K17		
	3712	K18		
	3713	K18		
N	3720	N18		
	3722	L14		
	3724	N14		
	3726	N15		
	3728	M17		
	3730	M17		
	3732	M18		
	3733	M18		
O	3734	N18		
	4105	G 4		
	4106	G 5		
	4107	K11		
	4109	F11		

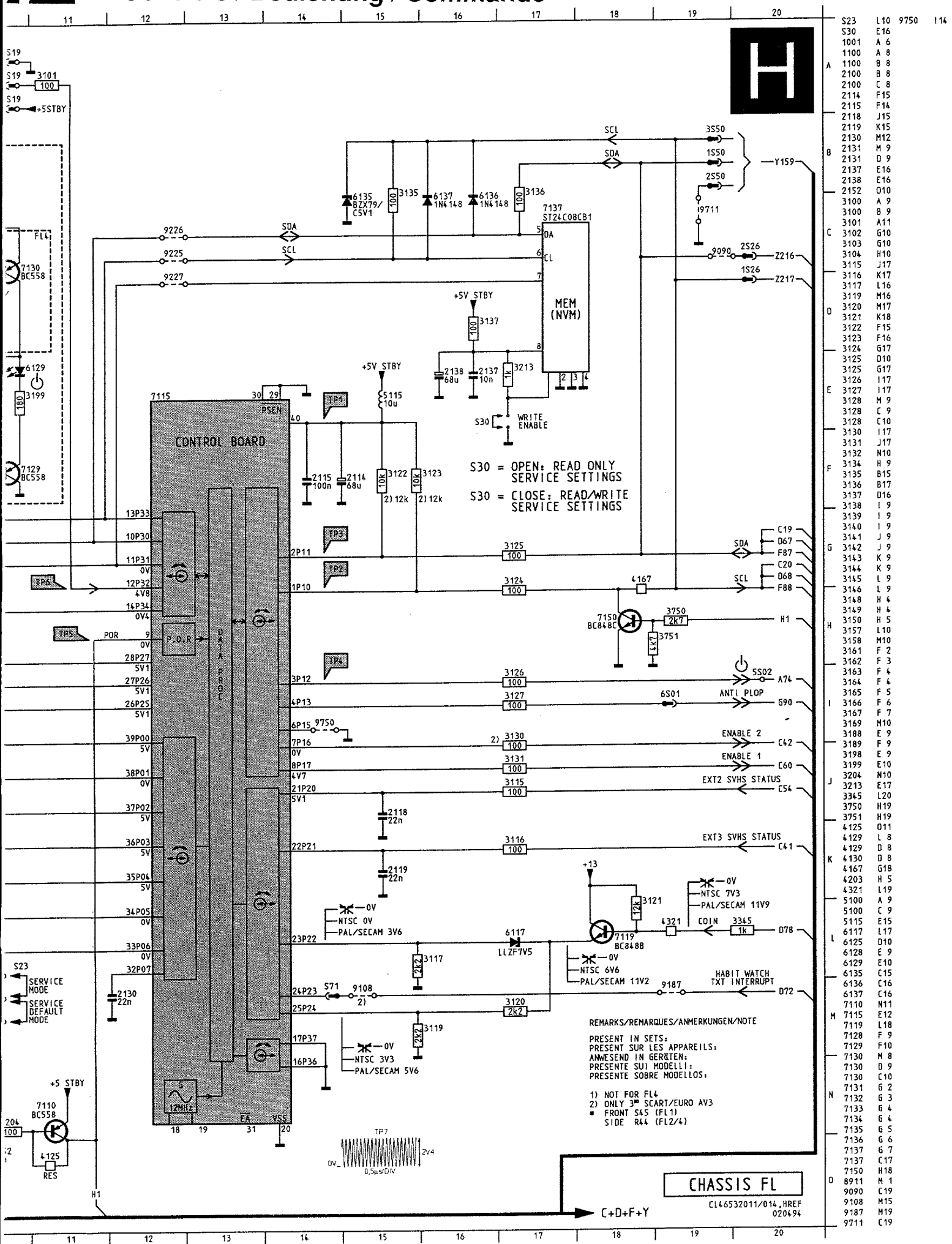

A
FL1
Mains supply
Hauptnetzteil
Alimentazione principale
Alimentation principale
SOPS
5230
FL2/FL4
DEGAUSSING COIL
Stand-by supply
Bereitschaftsnetzteil (stand by)
Alimentazione modo di attesa
Alimentation de veille
* MEASURED IN RESPECT OF MISURATO NEI CONFRONTI DI
(...V)
1) FOR PTV
2) ONLY IF 3204=PTC/PTC
3) ONLY IF 3204=PTC/NTC (FL1.17)
** REMARKS REMARQUES ANMERKUNGEN NOTE
25" 28" 33"
5204 - - X
9204 X X -
SK-1
220V~
285V*
+285
SAT
ON/OFF
4xGP15J-16
BZX79C20
BUT12AF
BYD33J
BAS32L
BYD34G
BUX85F
LL4148
BC857C
BC858
BC848
µSOPS
5255

FLx.26/.27 (4:3)

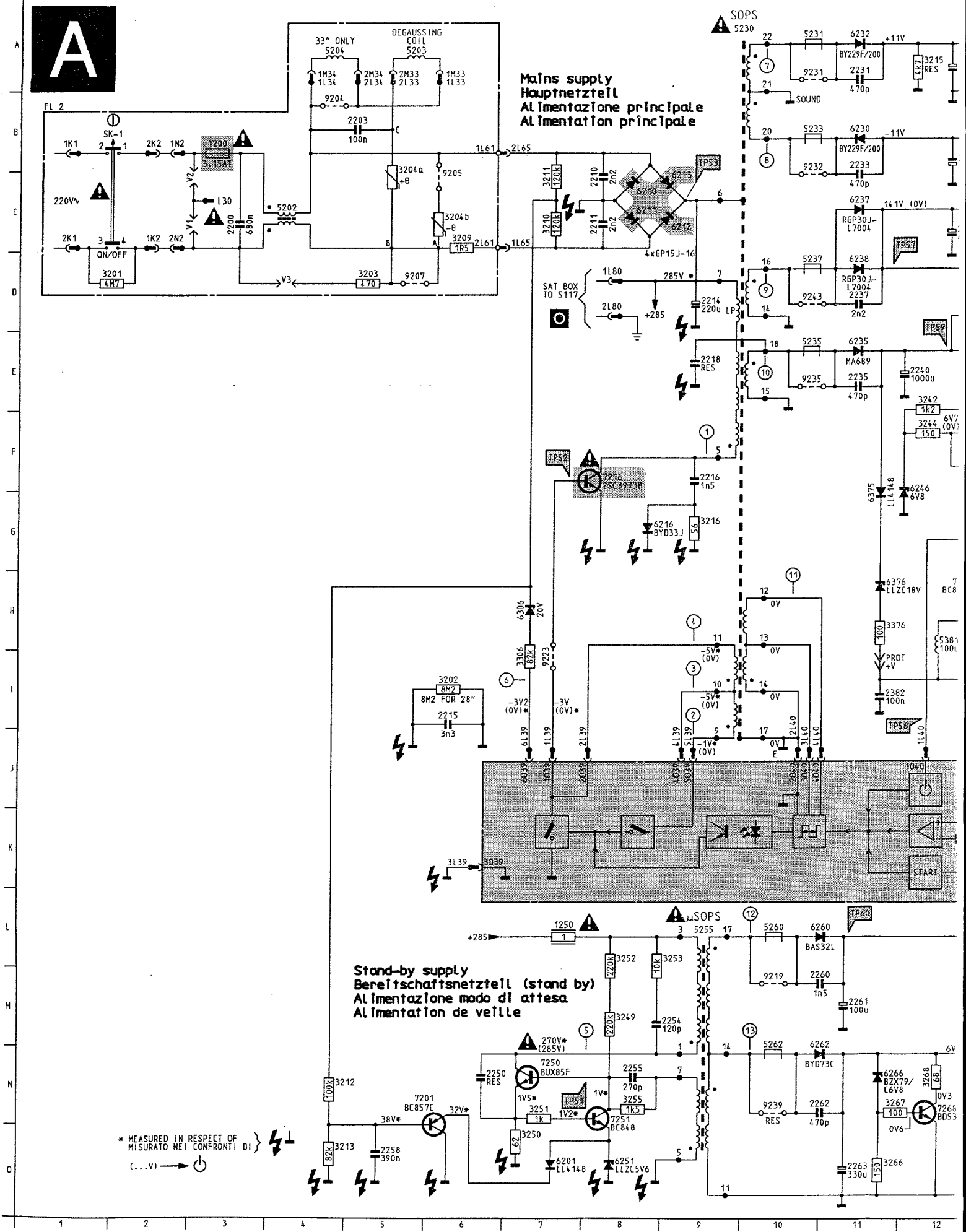


	1200	B 2	6232	A12
	1200	E 3	6235	E12
	2200	C 2	6237	D12
	2200	F 3	6238	C12
A	2203	B 4	6247	G14
	2203	E 4	6251	N 8
	2210	B 9	6254	M 9
	2211	C 9	6255	M 9
	2214	D10	6260	L12
	2215	I 9	6262	N12
	2216	F10	6266	N13
	2230	E15	6272	O14
B	2231	A12	6306	H 8
	2232	A13	6352	I15
	2233	B12	6353	I14
	2234	B13	6372	K14
	2235	E12	6373	K15
	2236	E12	6375	F12
	2237	D12	6376	H12
	2238	D12	6551	F17
C	2254	M 9	7201	O 7
	2255	N10	7216	F 9
	2256	O 8	7241	E13
	2258	O 6	7242	F14
	2260	M12	7250	N 8
	2261	M12	7251	O 9
	2262	N12	7256	O 9
D	2263	O12	7268	N13
	2270	N15	7270	M14
	2272	O15	7273	O15
	2380	H14	7274	O16
	2381	H13	7380	H13
	2386	H15	7381	H14
	2552	G15	7384	H15
	2556	F17	7551	E15
E	3201	C14	9048	L12
	3201	G 1	9204	A 4
	3202	I 9	9204	E 4
	3203	G 5	9205	B 5
	3204	B 4	9205	F 6
	3204	C 4	9206	C 5
	3204	E 5	9206	F 6
F	3204	F 5	9207	C 4
	3209	C 5	9207	F 5
	3209	F 6	9216	C 6
	3210	C 8	9217	B 6
	3211	B 8	9218	B 6
	3212	N 6	9223	H 8
	3213	O 6	9234	N16
	3215	A13	9239	D13
G	3216	G10		
	3234	E16		
	3235	E15		
	3236	F14		
	3237	E13		
	3239	C14		
	3240	D14		
H	3241	D14		
	3243	F14		
	3247	F16		
	3248	E16		
	3249	M 9		
	3250	L 8		
	3250	N 8		
	3251	N 8		
I	3252	L 9		
	3253	L 9		
	3254	N 8		
	3255	N 9		
	3256	O 7		
	3257	O 9		
	3266	O13		
J	3267	N13		
	3268	N13		
	3270	N15		
	3271	N14		
	3272	N14		
	3273	O15		
	3275	O16		
	3306	H 8		
K	3376	H12		
	3380	G14		
	3381	H14		
	3382	H16		
	3383	H16		
	3385	H16		
	3550	E16		
L	3562	F16		
	3563	G16		
	4274	O16		
	4L02	O17		
	5202	F 4		
	5203	A 5		
	5203	D 5		
	5204	A 4		
M	5204	C 3		
	5204	D 4		
	5230	A10		
	5231	A11		
	5233	B11		
	5235	E11		
	5237	D11		
	5241	D14		
N	5255	L10		
	5260	L11		
	5262	N11		
	5381	H13		
	6201	N 7		
	6210	C 9		
	6211	C 9		
	6212	C 9		
O	6213	B 9		
	6216	G 9		
	6220	H 8		
	6221	H 8		
	6230	B12		

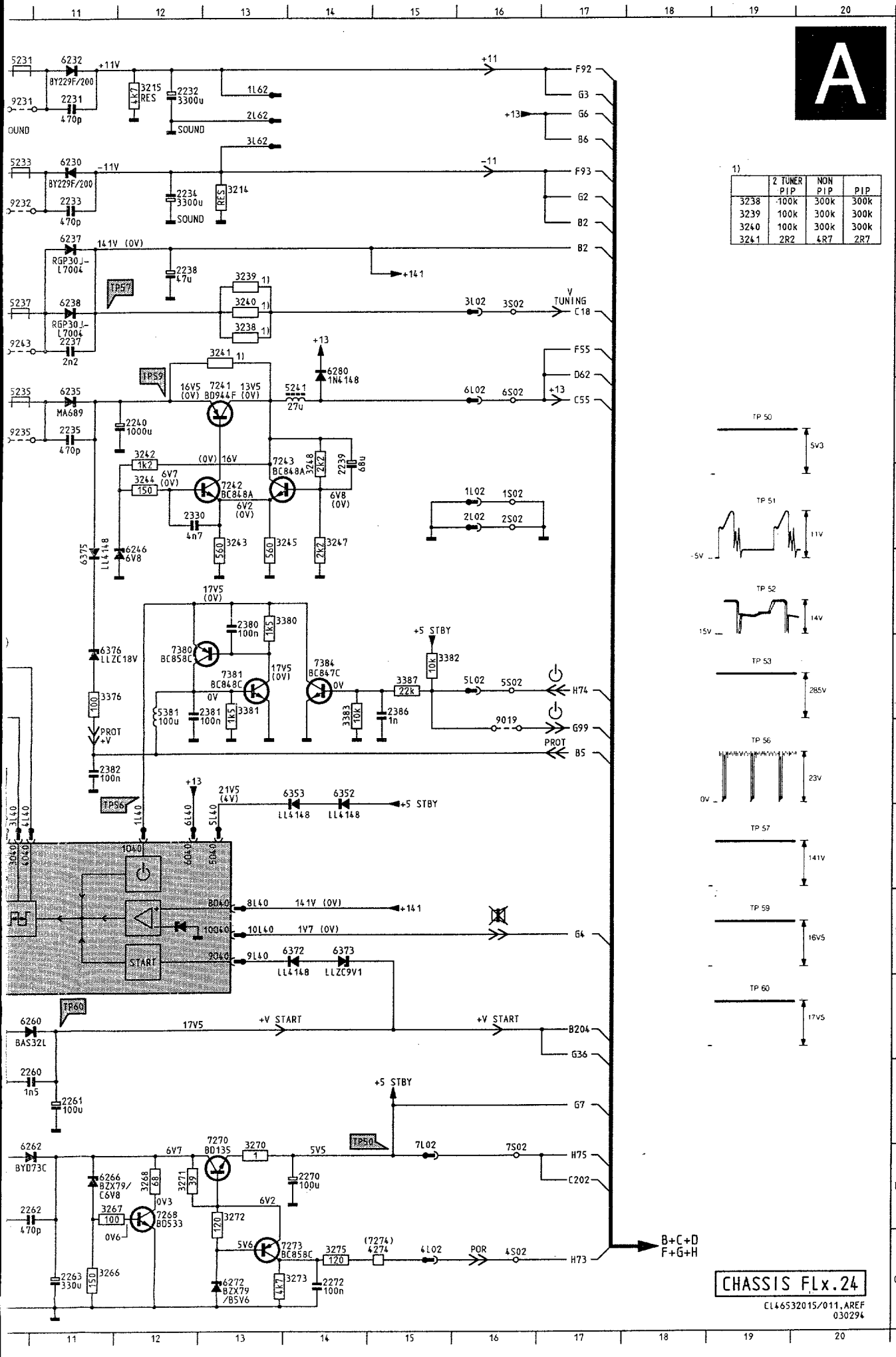

H
TP2
5V
0V
5ms/DIV
TP5
10ms/DIV
TP3
TP6
20ms/DIV
1001
IR TRANSM.
EMET. IR
IR SENDER
TRANSM. RI
TRANSMISOR IR
FL1
FL2/FL4
1100
RC-5
RC
3100
1k
5100
47u
2100
150u
+5
+5STBY
3S18
1S19
2S18
2S19
3101
100
1S18
3S19
3F19
2F19
1F19
3128
7130
BC548C
BC558
6125
BZX79/
C3V9
3125
2131
68u
4130
RES
4129
1R20
4F20
3R20
2F20
3188
2R20
3F20
4R20
1F20
3189
6128
6129
3198
3199
7128
7129
INSTALL
3161
3162
3163
3164
3165
3166
3167
7131
7132
7133
7134
7135
7136
7137
BC858
SAT INTERFACE
TXD=TOMAC
RXD=FROMAC
4S15
3S15
2S15
1S15
RXD 3102
TXD 3103
13P33
10P30
11P31
0V
12P32
4V8
14P34
0V4
TP6
TP5
POR
9
0V
28P27
5V1
27P26
5V1
26P25
5V1
39P00
5V
38P01
0V
37P02
5V
36P03
5V
35P04
5V
34P05
0V
33P06
0V
32P07
7S02 +5 STBY
A75
3149
3148
3150
4203
3) 3S11
2S11
1S11
4S11
5S11
6S11
7S11
10S11
9S11
8S11
LANGUAGE
PP
STORE
3134
3138
3139
3140
3141
3142
3143
3144
3145
3146
3157
3169
3158
S23
SERVICE
MODE
SERVICE
DEFAULT
MODE
2130
22n
1S05
2S05
3S05
4S05
5S05
6S05
9S05
8S05
7S05
FL1
8911
1LO5
2LO5
3LO5
4LO5
5LO5
6LO5
9LO5
8LO5
7LO5
7130
BC848C
HEF STROBE
7110
BC558
3132
3204
2152
22n
4125
POR 1
4S02
C53
A73
H1



S23	L10	9750	I14
S30	E16		
1001	A 6		
1100	A 8		
1100	B 8		
2100	B 8		
2100	C 8		
2114	F15		
2115	F14		
2118	J15		
2119	K15		
2130	M12		
2131	M 9		
2131	D 9		
2137	E16		
2138	E16		
2152	O10		
3100	A 9		
3100	B 9		
3101	A11		
3102	G10		
3103	G10		
3104	H10		
3115	J17		
3116	K17		
3117	L16		
3119	M16		
3120	M17		
3121	K18		
3122	F15		
3123	F16		
3124	G17		
3125	D10		
3125	G17		
3126	I17		
3127	I17		
3128	M 9		
3128	C 9		
3128	C10		
3130	I17		
3131	J17		
3132	N10		
3134	H 9		
3135	B15		
3136	B17		
3137	D16		
3138	I 9		
3139	I 9		
3140	I 9		
3141	J 9		
3142	J 9		
3143	K 9		
3144	K 9		
3145	L 9		
3146	L 9		
3148	H 4		
3149	H 4		
3150	H 5		
3157	L10		
3158	M10		
3161	F 2		
3162	F 3		
3163	F 4		
3164	F 4		
3165	F 5		
3166	F 6		
3167	F 7		
3169	M10		
3188	E 9		
3189	F 9		
3198	E 9		
3199	E10		
3204	N10		
3213	E17		
3345	L20		
3750	H19		
3751	H19		
4125	O11		
4129	L 8		
4129	D 8		
4130	D 8		
4167	G18		
4203	H 5		
4321	L19		
5100	A 9		
5100	C 9		
5115	E15		
6117	L17		
6125	D10		
6128	E 9		
6129	E10		
6135	C15		
6136	C16		
6137	C16		
7110	N11		
7115	E12		
7119	L18		
7128	F 9		
7129	F10		
7130	M 8		
7130	D 9		
7130	C10		
7131	G 2		
7132	G 3		
7133	G 4		
7134	G 4		
7135	G 5		
7136	G 6		
7137	G 7		
7137	C17		
7150	H18		
8911	M 1		
9090	C19		
9108	M15		
9187	M19		
9711	C19		


A
Mains supply
Hauptnetzteil
Alimentazione principale
Alimentation principale
Stand-by supply
Bereitschaftsnetzteil (stand by)
Alimentazione modo di attesa
Alimentation de veille
SOPS
µSOPS
33" ONLY
DEGAUSSING COIL
SAT BOX TO S117
ON/OFF
SOUND
PROT +V
START
8M2 FOR 28"
* MEASURED IN RESPECT OF
MISURATO NEI CONFRONTI DI
(...V)

FLx.24 (16:9)



(727	O15	6262	N11
1200	B 3	6266	N11
1200	B 3	6272	O13
1250	L 7	6280	D14
2200	C 3	6306	H 7
2200	C 3	6352	I14
2203	B 5	6353	I14
2203	B 5	6372	K14
2210	C 8	6373	K14
2211	C 8	6375	G11
2214	D 9	6376	H11
2215	I 6	7201	N 6
2216	F 9	7216	F 8
2218	E 9	7241	E13
2231	A11	7242	F13
2232	A12	7243	F13
2233	B11	7250	N 7
2234	B12	7251	N 8
2235	E11	7268	N12
2237	D11	7270	M13
2238	C12	7273	O13
2239	E14	7380	H12
2240	E12	7381	H13
2250	N 6	7384	H14
2254	M 9	9019	I16
2255	N 8	9204	B 4
2258	O 5	9205	C 6
2260	M11	9205	C 6
2261	M11	9207	C 5
2262	N11	9207	D 5
2263	O11	9218	B 5
2270	N14	9219	M10
2272	O14	9223	I 7
2330	F12	9231	A10
2380	G13	9232	B10
2381	H12	9235	E10
2382	I11	9239	N10
2386	H15	9243	D10
3201	D 1		
3201	D 1		
3202	I 6		
3203	D 5		
3204	B 5		
3204	C 5		
3204	B 5		
3204	C 6		
3209	C 6		
3209	C 6		
3210	C 7		
3211	C 7		
3212	N 4		
3213	O 4		
3214	B13		
3215	A12		
3216	G 9		
3238	D13		
3239	C13		
3240	D13		
3241	D13		
3242	E12		
3243	F13		
3244	F12		
3245	F13		
3247	F14		
3248	E14		
3249	M 8		
3250	O 7		
3251	N 7		
3252	L 8		
3253	L 9		
3255	N 8		
3266	O11		
3267	N11		
3268	N12		
3270	N13		
3271	N12		
3272	N13		
3273	O14		
3275	O14		
3306	I 7		
3376	H11		
3380	G13		
3381	H13		
3382	H15		
3383	H14		
3387	H15		
5202	C 4		
5203	A 5		
5203	A 5		
5204	C 4		
5204	A 4		
5204	A 4		
5230	A 9		
5231	A10		
5233	B10		
5235	E10		
5237	D10		
5241	E14		
5255	L 9		
5260	L10		
5262	N10		
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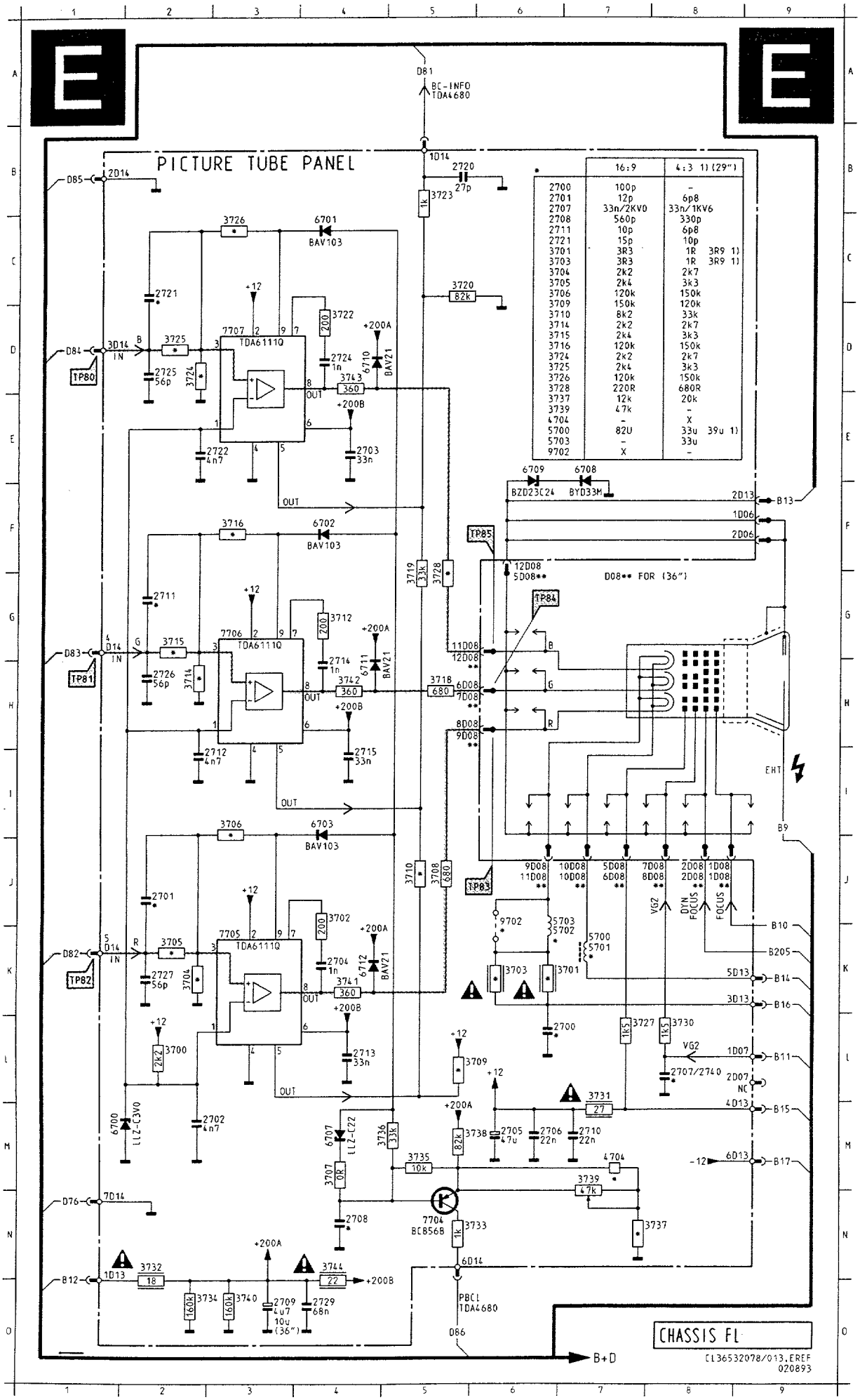
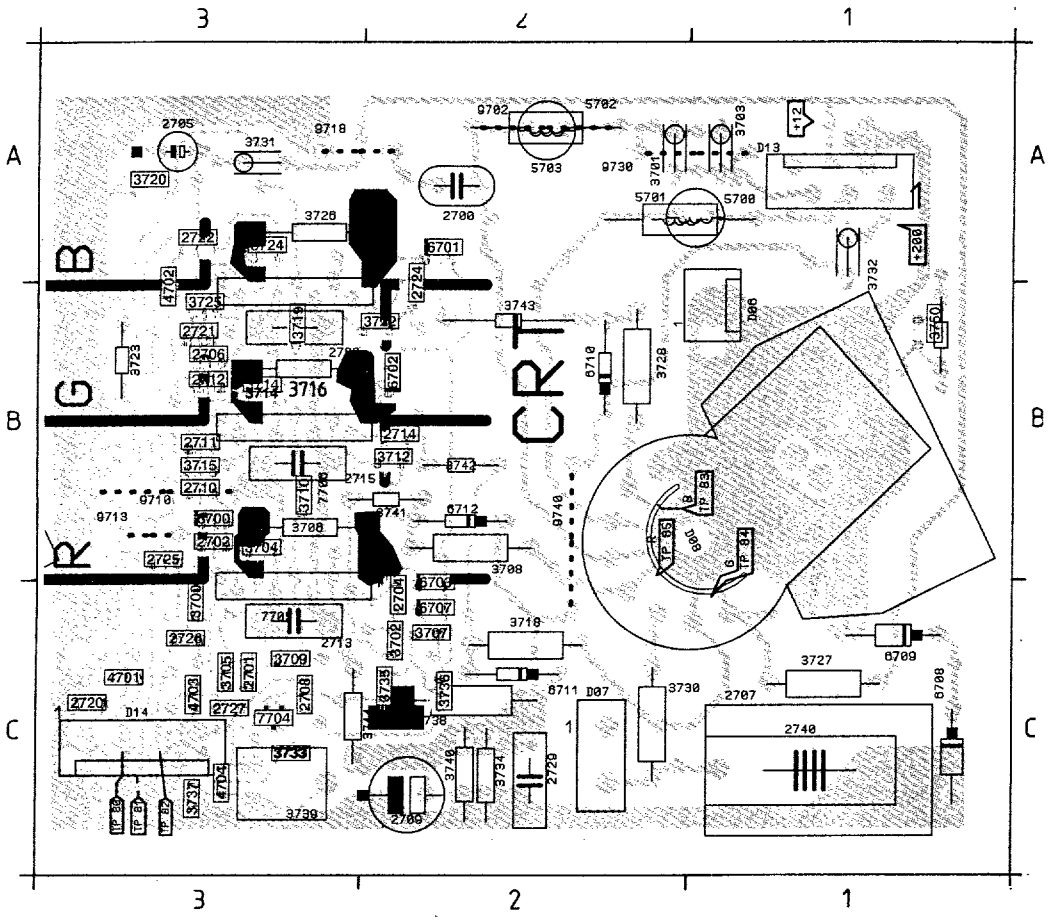
6201	D 7		
6210	C 8		
6211	C 8		
6212	C 9		
6213	C 9		
6216	G 8		
6230	B11		
6232	A11		
6235	E11		
6237	C11		
6238	D11		
6246	G12		
6251	O 8		
6260	L11		

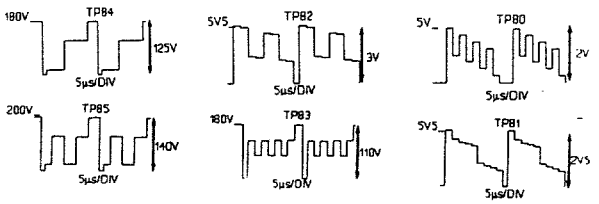


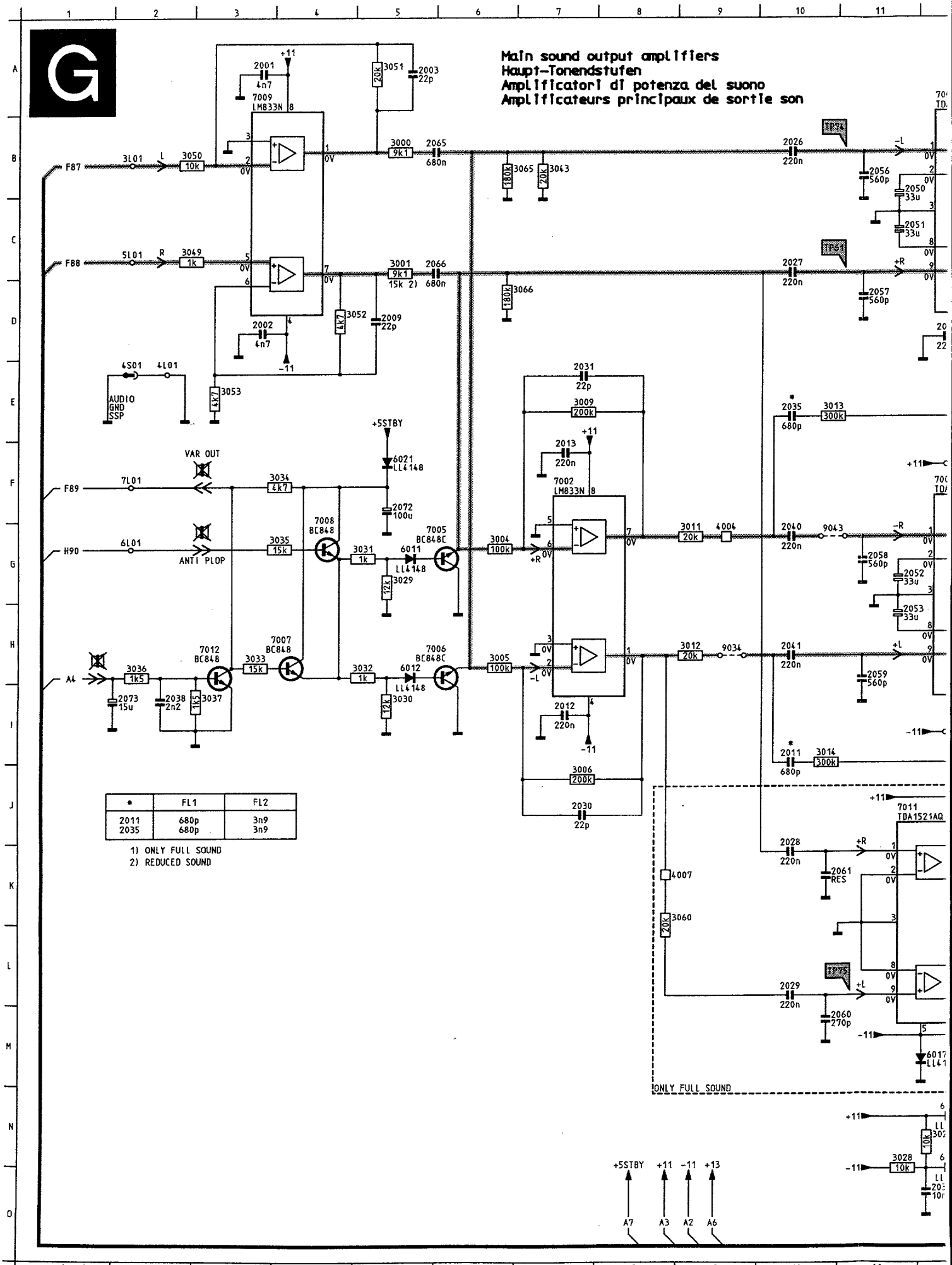
		16:9	4:3 1) (29")
2700	K 6	100p	-
2701	J 2	12p	6p8
2702	M 2	33n/2KV0	33n/1KV6
2703	L 4	560p	330p
2704	K 4	10p	6p8
2705	M 6	15p	10p
2706	M 6	3R3	1R 3R9 1)
2707	L 8	3R3	1R 3R9 1)
2708	N 4	2k2	2k7
2709	E 7	2k4	3k3
2710	M 7	120k	150k
2711	G 2	150k	120k
2712	I 2	8k2	33k
2713	E 4	2k2	2k7
2714	H 4	2k4	3k3
2715	I 4	120k	150k
2720	B 5	2k2	2k7
2721	C 2	2k4	3k3
2722	E 2	120k	150k
2724	D 4	220R	680R
2725	D 2	12k	20k
2726	H 2	47k	-
2727	K 2	-	X
2729	E 6	82U	33u 39u 1)
3700	L 2	-	33u
3701	K 6	X	-
3702	J 4		
3703	K 6		
3704	K 2		
3705	K 2		
3706	I 3		
3707	M 4		
3708	J 5		
3709	L 5		
3710	J 5		
3712	G 4		
3714	H 2		
3715	G 2		
3716	F 3		
3718	H 5		
3719	G 5		
3720	C 5		
3722	D 4		
3723	B 5		
3724	D 2		
3726	C 3		
3727	K 7		
3728	G 5		
3730	K 8		
3731	L 7		
3732	D 8		
3733	N 5		
3734	E 8		
3735	M 5		
3736	M 5		
3737	N 6		
3738	M 5		
3739	M 6		
3740	E 7		
3741	K 4		
3742	H 4		
3743	D 4		
3744	D 6		
4709	I 2		
5700	J 7		
6700	M 1		
6701	C 4		
6702	F 4		
6703	I 4		
6707	M 4		
6708	E 7		
6709	E 6		
6710	D 4		
6711	H 4		
6712	K 4		
7704	N 5		
7705	K 3		
7706	G 3		
7707	D 3		

Platines Tube-image



D06	B1	3708	B2	5701	A2
D07	C2	3709	C3	5702	A2
D08	B1	3710	B3	5703	A2
D13	A1	3712	B2	6700	B3
D14	C3	3714	B3	6701	A2
2700	A2	3715	B3	6702	B2
2701	C3	3716	B3	6703	C2
2702	B3	3718	C2	6707	C2
2703	B3	3719	B3	6708	C1
2704	C2	3720	A3	6709	C1
2705	A3	3722	B2	6710	B2
2706	B3	3723	B3	6711	C2
2707	C1	3724	A3	6712	B2
2708	C3	3725	B3	7704	C3
2709	C2	3726	A3	7705	C3
2710	B3	3727	C1	7706	B3
2711	B3	3728	B2	7707	B3
2712	B3	3730	C2	9702	A2
2713	C3	3731	A3	9710	B3
2714	B2	3732	A1	9713	B3
2715	B3	3733	C3	9718	A3
2720	C3	3734	C2	9730	A1
2721	B3	3735	C2	9740	B2
2722	A3	3736	C2		
2724	B2	3738	C2		
2725	B3	3739	C3		
2726	C3	3740	C2		
2727	C3	3741	B2		
2729	C2	3742	B2		
2740	C1	3743	B2		
3700	C3	3744	C3		
3701	A2	3750	B1		
3702	C2	3751	B1		
3703	A1	4701	C3		
3704	B3	4702	B3		
3705	C3	4703	C3		
3706	B3	4704	C3		
3707	C2	5700	A1		

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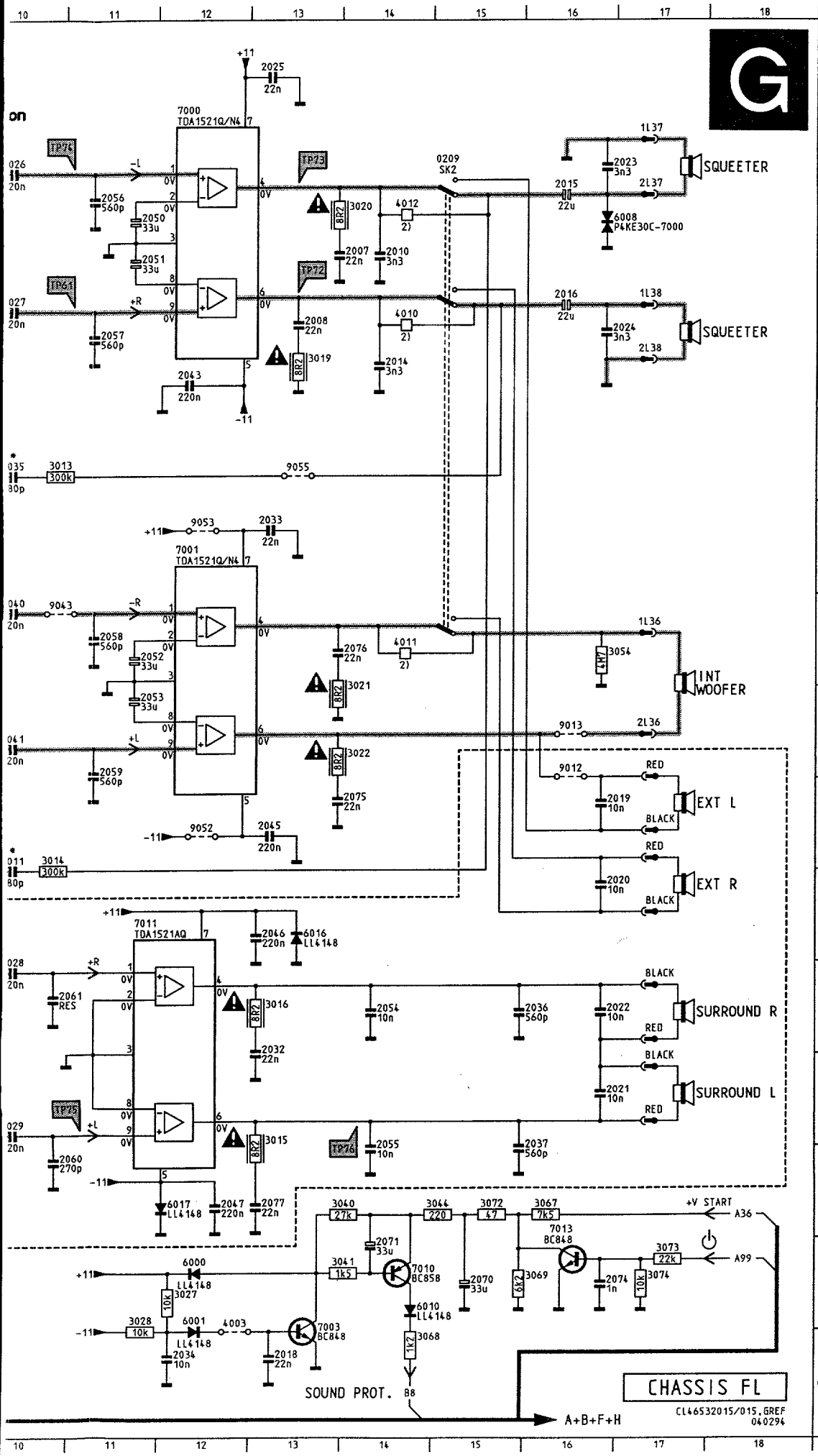
Main sound output amplifiers
Haupt-Tonendstufen
Amplificatori di potenza del suono
Amplificateurs principaux de sortie son
F87
F88
F89
H90
A4
3L01
5L01
7L01
6L01
4S01
4L01
AUDIO GND SSP
VAR OUT
ANTI PLOP
7009 LM833N
7002 LM833N
7008 BC848
7012 BC848
7007 BC848
7005 BC848C
7006 BC848C
6021 LL4148
6011 LL4148
6012 LL4148
7011 TDA1521AQ
+5STBY
+11
-11
+13
TP74
TP64
TP75
ONLY FULL SOUND
1) ONLY FULL SOUND
2) REDUCED SOUND
* FL1 FL2
2011 680p 3n9
2035 680p 3n9
A7
A3
A2
A6

Amplificateur audio



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	2001	A 3	6012	H 5
	2002	D 3	6016	J13
	2003	A 5	6017	M12
A	2007	C14	6021	F 5
	2008	D13	7000	A12
	2009	D 5	7001	F12
	2010	C14	7002	F 7
	2011	I10	7003	O13
	2012	I 7	7005	G 5
	2013	F 7	7006	H 5
	2014	D14	7007	H 3
B	2015	B16	7008	G 4
	2016	C16	7009	A 3
	2018	O13	7010	N14
	2019	I16	7011	J11
	2020	J16	7012	H 3
	2021	L16	7013	M16
	2022	K16	9012	H16
	2023	B16	9013	H16
C	2024	D16	9034	H 9
	2025	A13	9043	G10
	2026	B10	9052	I12
	2027	C10	9053	F12
	2028	K10	9055	E13
	2029	L10		
	2030	J 7		
D	2031	E 7		
	2032	K13		
	2033	F13		
	2034	O12		
	2035	E10		
	2036	K16		
	2037	M16		
	2038	I 2		
E	2040	G10		
	2041	H10		
	2043	D12		
	2045	I13		
	2046	J13		
	2047	M12		
	2050	B11		
F	2051	C11		
	2052	G11		
	2053	H11		
	2054	K14		
	2055	M14		
	2056	B11		
	2057	D11		
	2058	G11		
G	2059	H11		
	2060	M10		
	2061	K10		
	2065	B 5		
	2066	C 5		
	2070	N15		
	2071	N14		
H	2072	F 5		
	2073	I 2		
	2074	N16		
	2075	I14		
	2076	G14		
	2077	M13		
	3000	B 5		
	3001	C 5		
I	3004	G 6		
	3005	H 6		
	3006	J 7		
	3009	E 7		
	3011	G 9		
	3012	H 9		
	3013	E10		
	3014	I10		
J	3015	L13		
	3016	K13		
	3019	D13		
	3020	B14		
	3021	G14		
	3022	H14		
	3027	N12		
K	3028	N11		
	3029	G 5		
	3030	I 5		
	3031	G 5		
	3032	H 5		
	3033	H 3		
	3034	F 4		
	3035	G 4		
L	3036	H 2		
	3037	I 3		
	3040	M14		
	3041	N14		
	3043	B 7		
	3044	M15		
	3049	C 2		
M	3050	B 2		
	3051	A 5		
	3052	D 4		
	3053	E 3		
	3054	G16		
	3060	K 8		
	3065	B 6		
	3066	D 6		
N	3067	M16		
	3068	O14		
	3069	N16		
	3072	M15		
	3073	N17		
	3074	N17		
	4003	N12		
	4004	G 9		
O	4007	K 8		
	6000	N12		
	6001	N12		
	6008	B16		
	6010	N14		

Large signal panel FLx.26/.27 /

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L02	E1	2240	D4	3011	C5	3370	H4	3538	D3	5308	H5	7001	D5	9010	C5	9237	F1	9614	E2
L03	A1	2241	B4	3012	C5	3371	H4	3539	D1	5310	H5	7002	C5	9012	A4	9238	G3	9615	B2
L08	C4	2242	B4	3013	D4	3372	H4	3540	C4	5381	E3	7003	A5	9013	A4	9239	B4		
L13	C4	2250	F3	3014	D4	3374	H4	3541	C4	5503	B1	7005	D5	9015	B4	9240	B4		
L27	B3	2254	F2	3016	B5	3375	H4	3542	C4	5504	C1	7006	D5	9017	B5	9241	E3		
L28	G1	2255	F3	3019	B5	3376	E3	3543	C4	5506	C1	7007	D5	9020	D5	9242	G2		
L30	A1	2258	F3	3020	B5	3378	H4	3544	C4	5510	D1	7008	D5	9022	A3	9243	E3		
L31	E2	2259	F3	3021	B5	3380	E3	3545	E2	5511	D3	7009	G1	9023	A4	9244	B4		
L33	G2	2260	E3	3022	B5	3381	E3	3546	C4	5514	F2	7010	A5	9024	A4	9246	E1		
L34	G2	2261	E3	3027	A5	3382	E3	3547	C2	5520	E2	7011	B5	9025	A5	9250	F2		
L35	G3	2262	E3	3028	A5	3383	E3	3548	D2	5521	E1	7012	D4	9026	A4	9251	F2		
L36	A2	2263	E2	3029	D5	3385	E3	3549	D2	5522	E2	7013	A5	9027	A5	9300	H5		
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L40	E3	2303	H5	3033	D4	3405	B3	3555	B3	5527	C1	7242	B4	9032	C5	9401	B2		
L61	G2	2308	H5	3034	D4	3406	B3	3556	B3	5528	C2	7246	E1	9033	C5	9402	B3		
L62	E5	2321	H5	3035	D5	3407	B3	3557	C4	5534	D3	7250	F3	9034	C5	9405	A1		
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L67	D4	2351	H4	3037	D4	3409	B3	3559	B4	5543	D4	7268	F2	9036	A4	9407	B2		
L68	C3	2360	H4	3040	A5	3410	B3	3560	C3	5548	D1	7270	F2	9037	B3	9450	B1		
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L87	B2	2372	H4	3043	C4	3413	B3	3563	B4	6001	A5	7274	G1	9041	C4	9454	B2		
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SK2	B3	2376	H4	3049	G1	3415	B3	3601	C2	6010	A5	7311	H5	9043	D5	9457	A1		
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2005	G1	2406	B3	3067	A4	3425	B3	3611	F1	6213	F4	7381	E3	9055	A4	9501	D2		
2007	B5	2407	B2	3068	A4	3426	A2	3612	E1	6216	F5	7384	E3	9056	A4	9504	D2		
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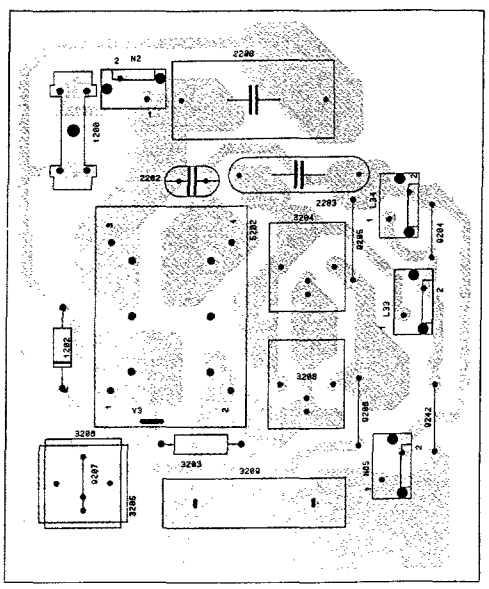
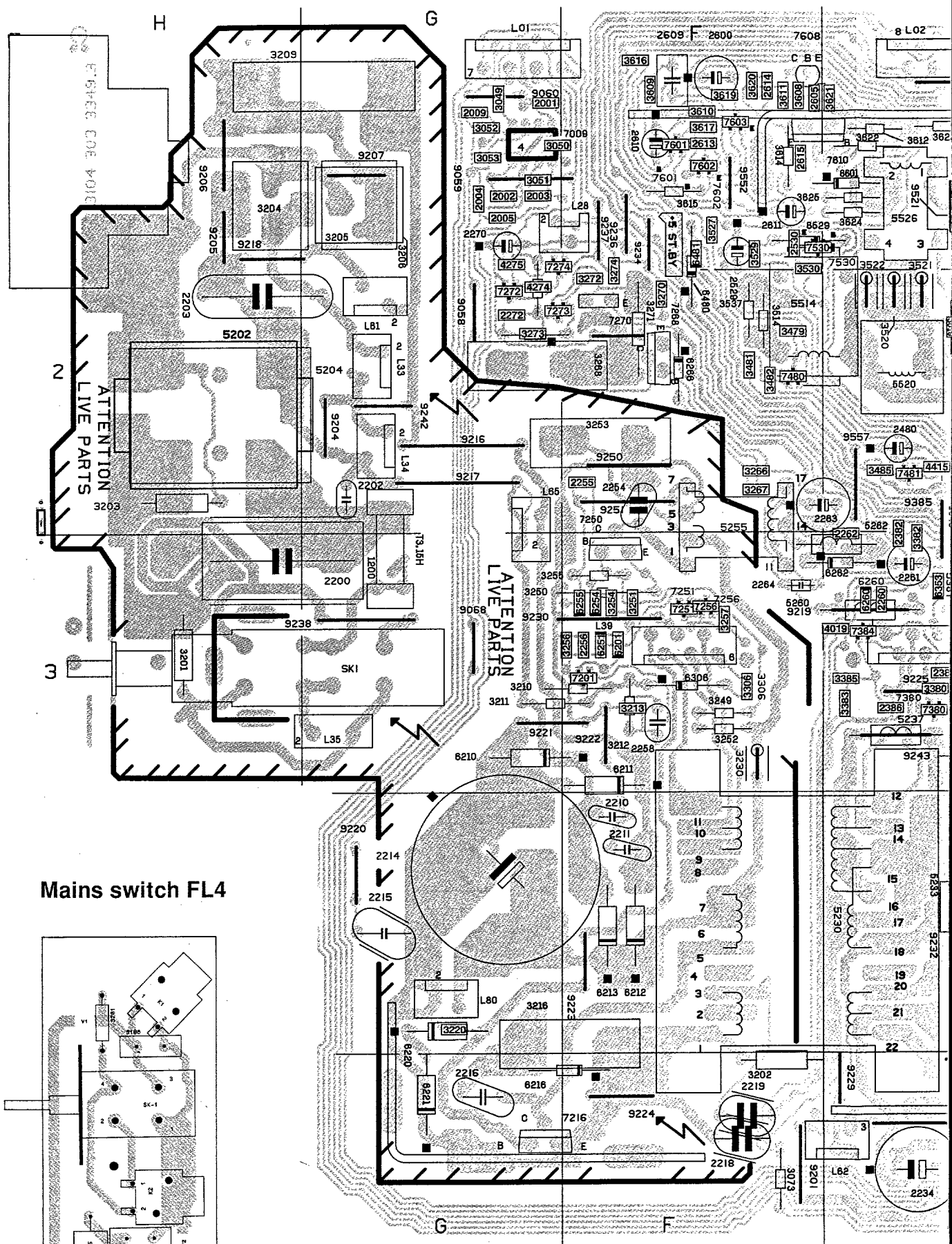
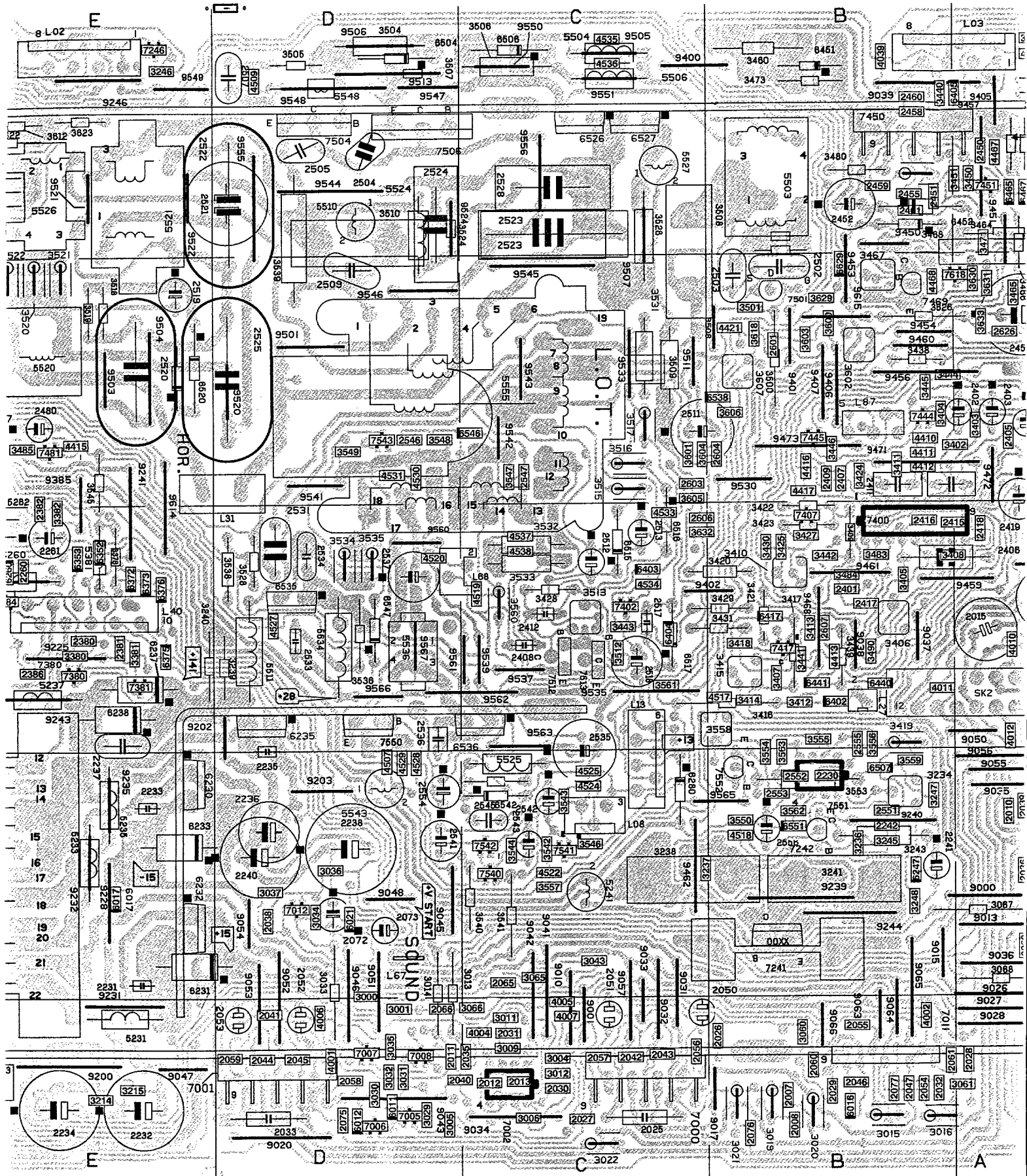
Mains filter FL4



Groß-signal Platte FLx.26/.27



Platine forts signeaux FLx.26/.27



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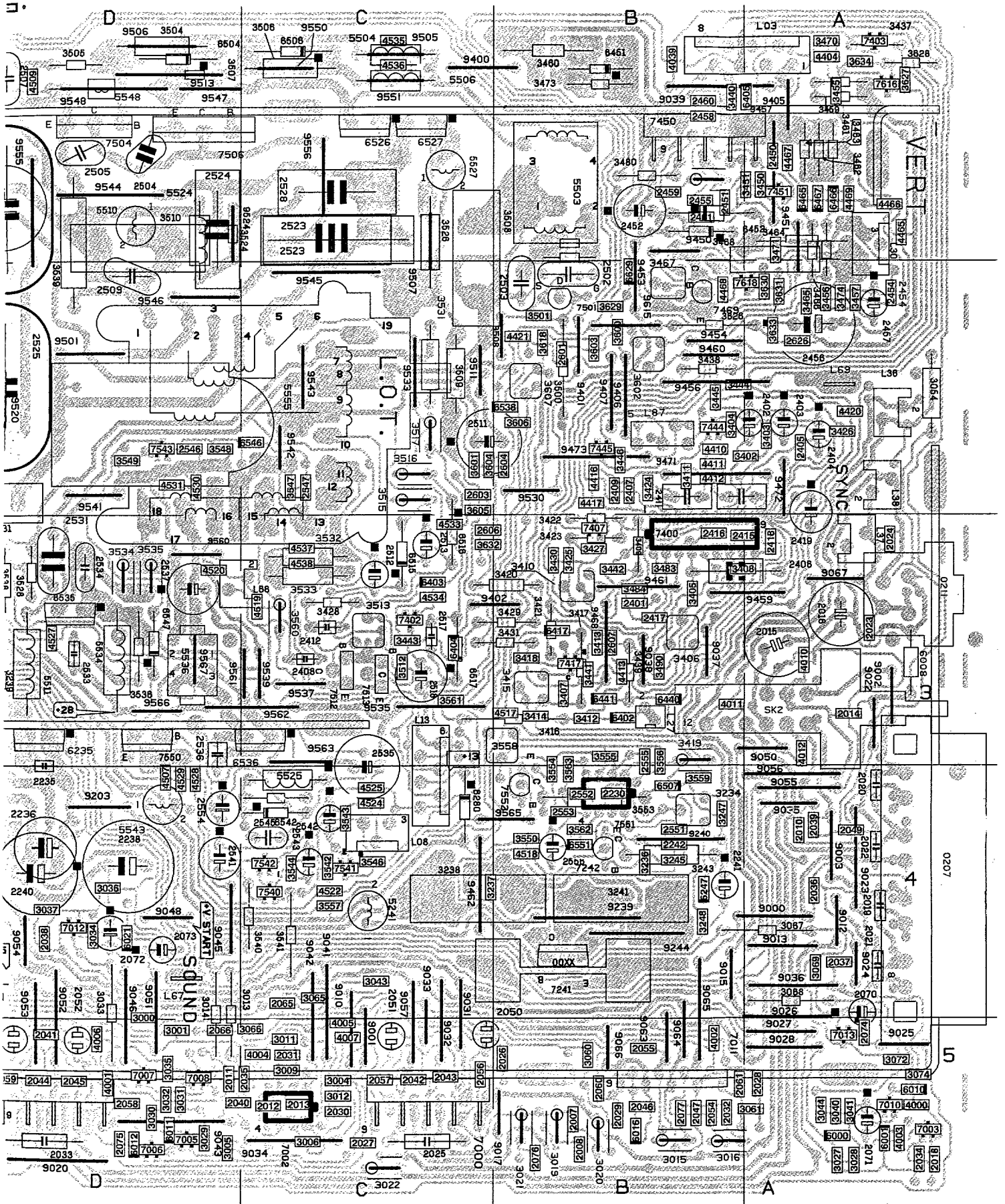

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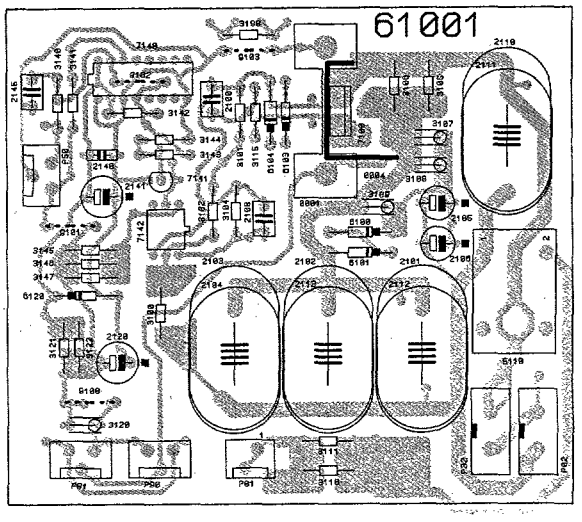
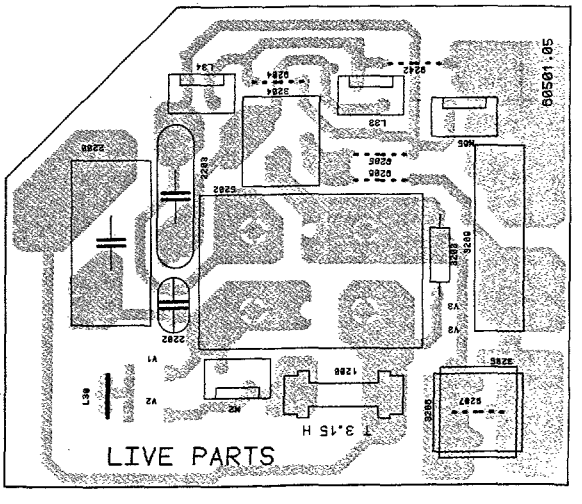
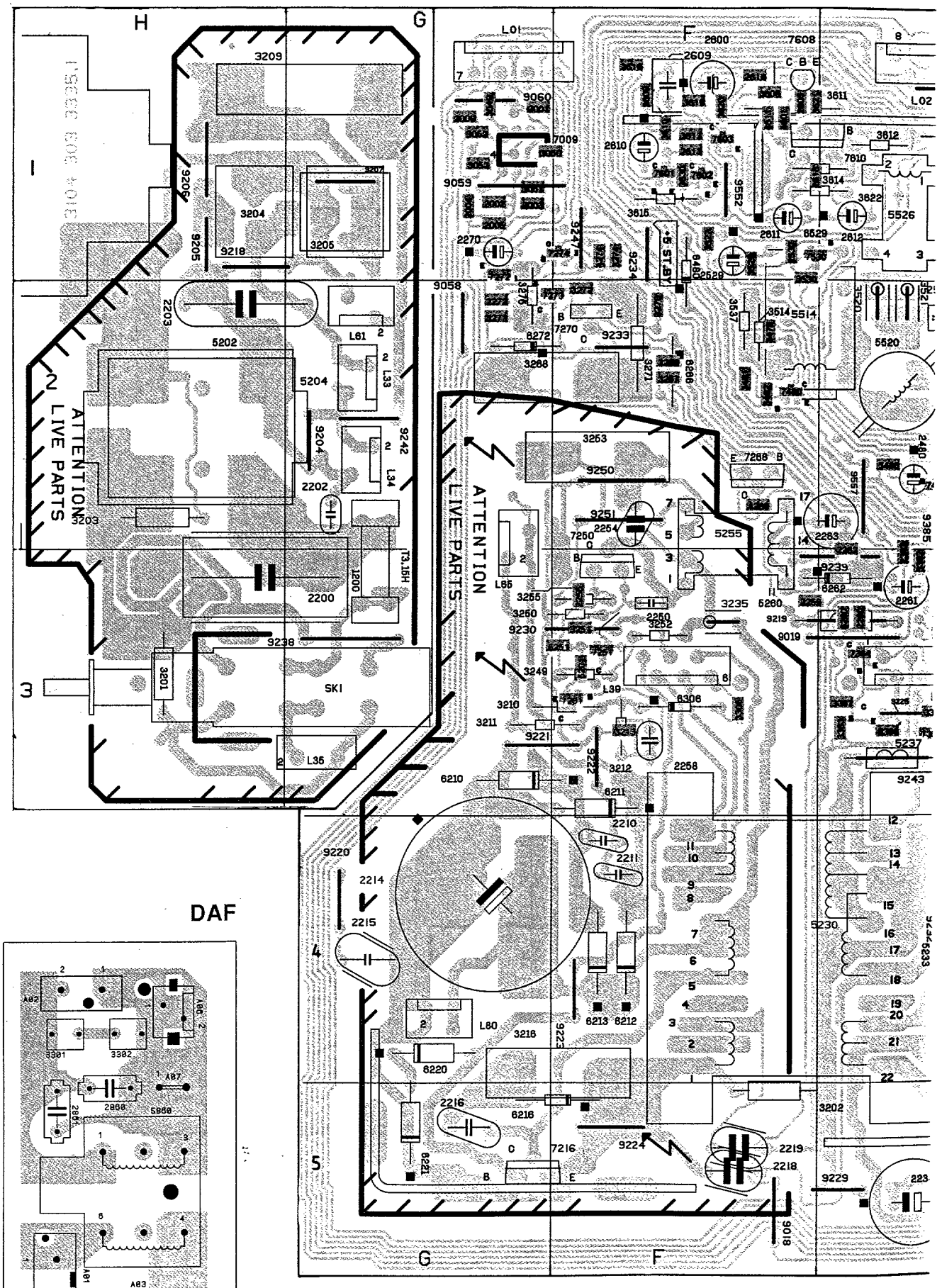
Panorama



Mains filter FL2



Large signal panel FLx.24 / Groß-signal Platte FLx.24 /



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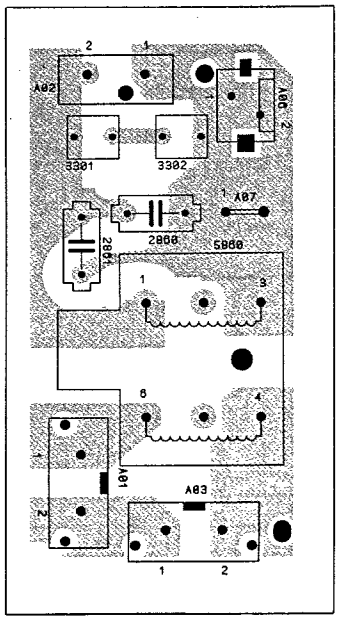

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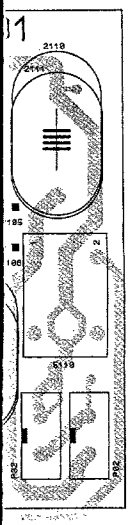

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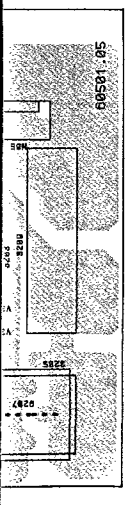
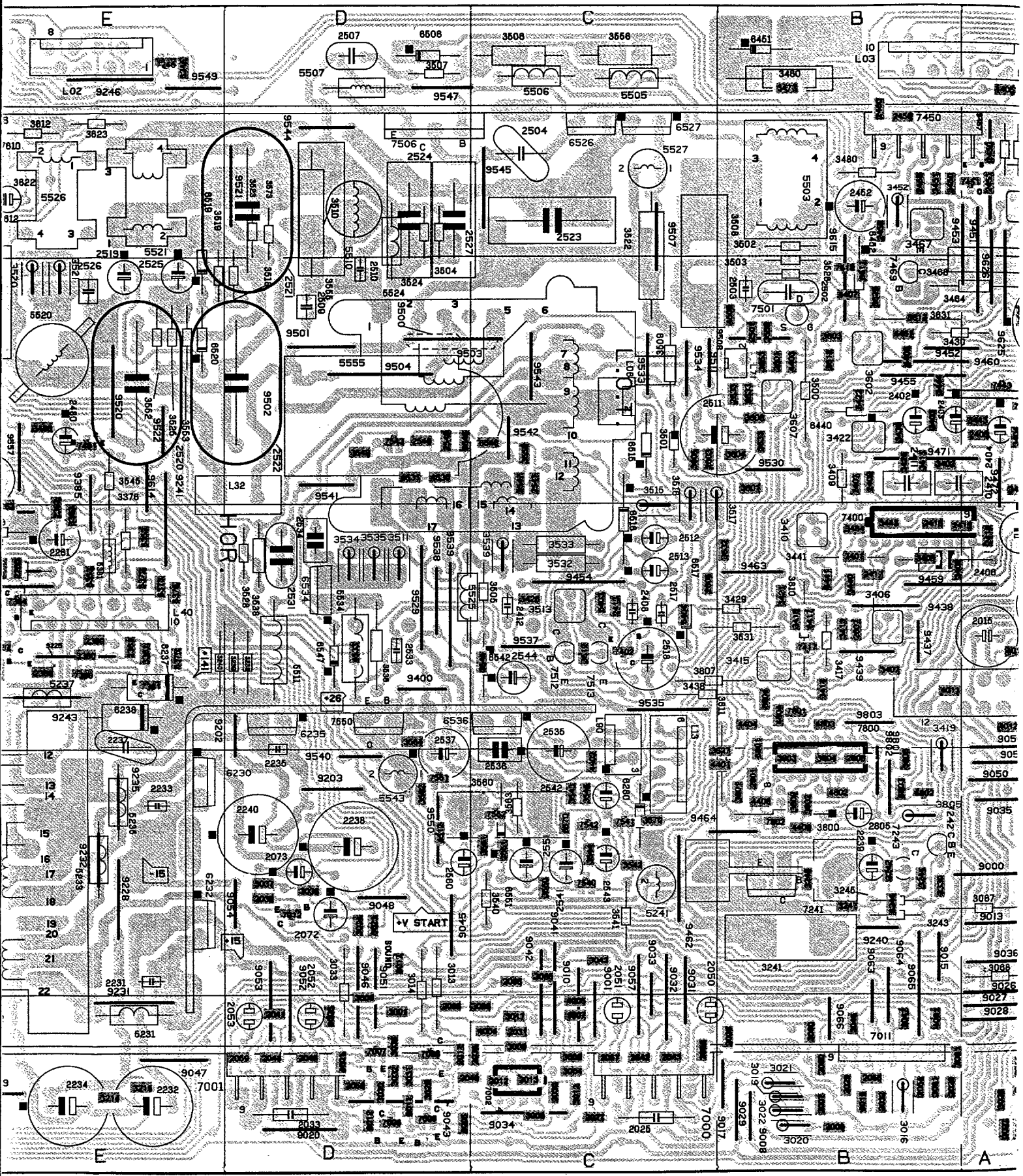


Platine forts signeaux FLx.24



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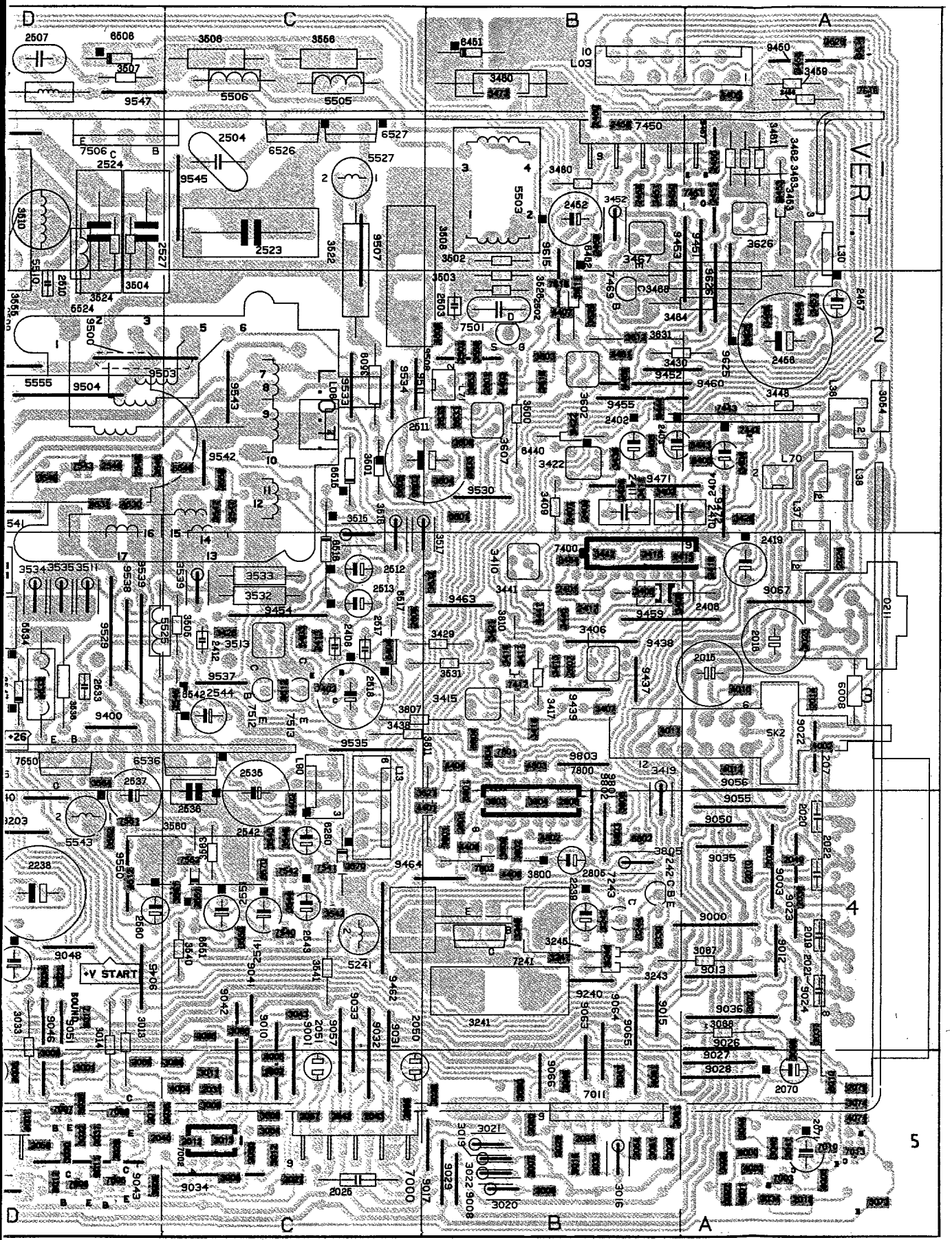

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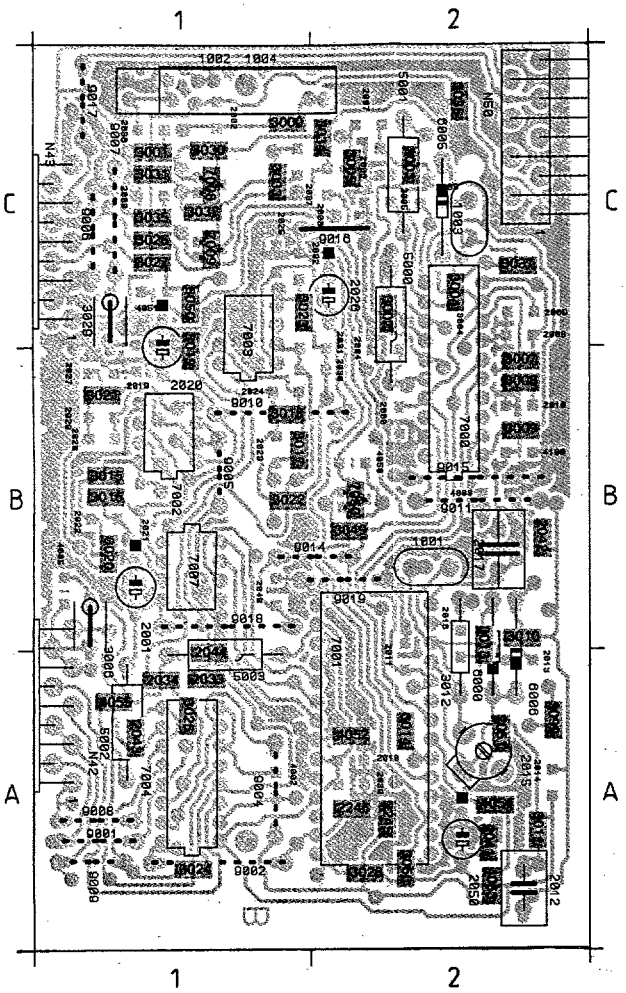

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1004	C1	2024	B1	3000	C1	3025	A1	4100	B2	9009	A1
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2015	A2	2040	B1	3016	B1	4002	A1	7009	C1		
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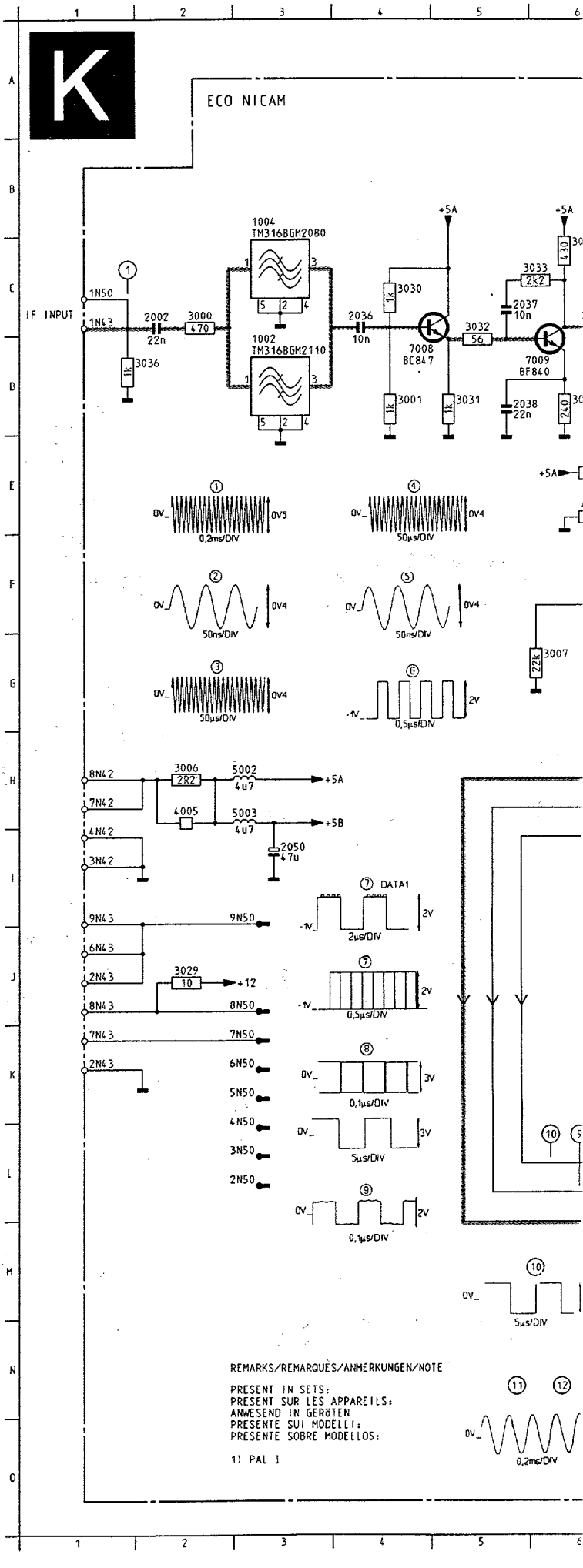

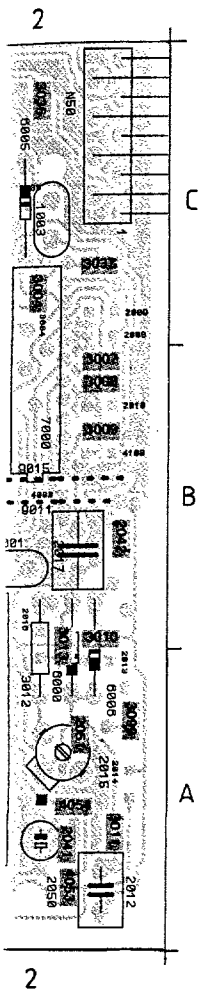

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5002	A1	9014	B2
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6006	A2	9018	B1
6050	C1	9019	B2
7000	B2		
7001	A2		
7002	B1		
7003	B1		
7004	A1		
7007	B1		
7008	C1		
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7050	B2		
9001	A1		

K

ECO NICAM

IF INPUT

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1002 TM316BGM2110

7008 BC847

7009 BF840

7000 TDA8732

QPSK

CFO SFO SF1 CF1

CARLPF

11.7MHz PALI

13.104M PALBG

11.648 MHz

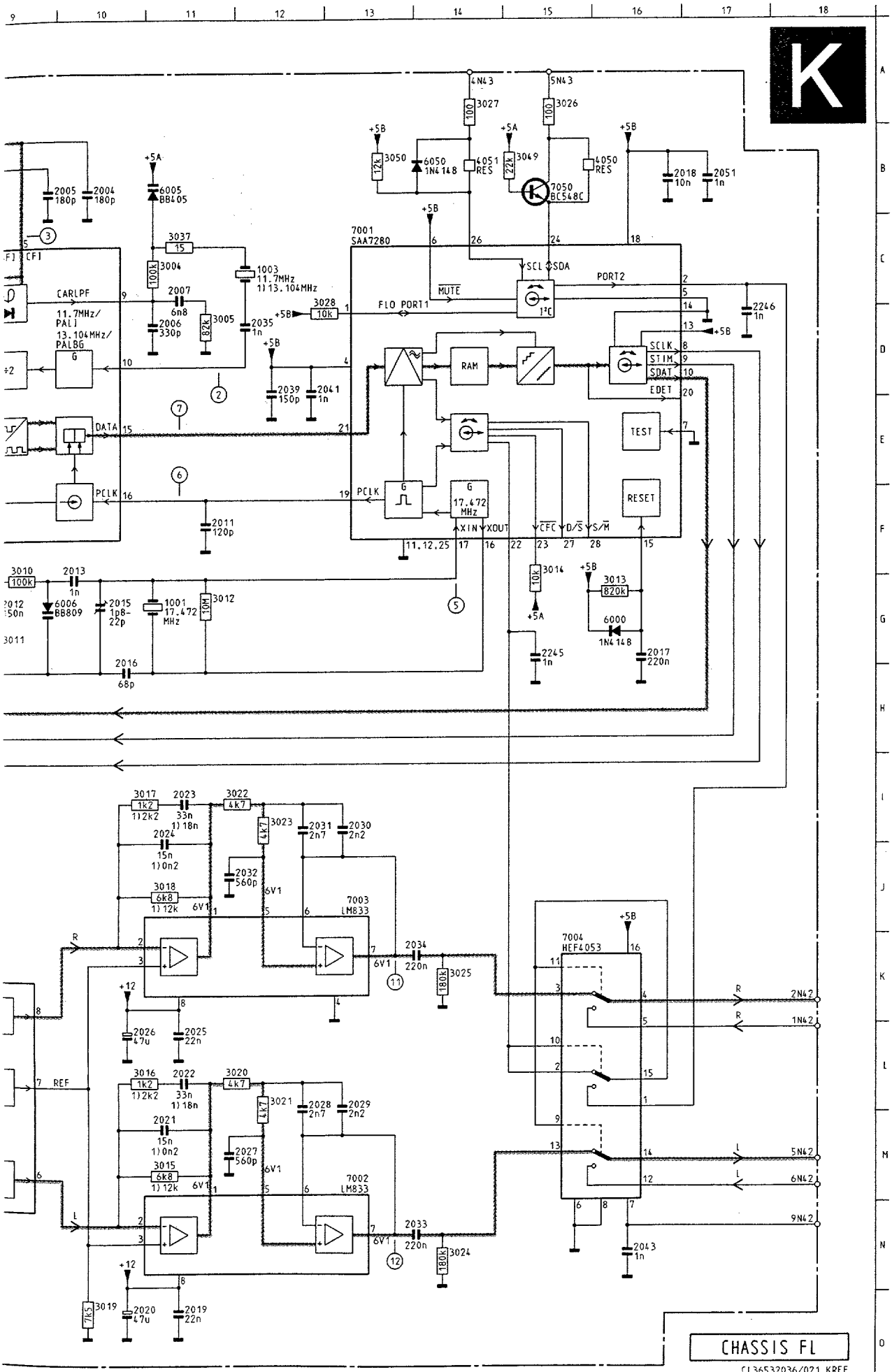
QMC IMC CLK LPF

7007 TDA1543

REMARKS/REMARQUES/ANMERKUNGEN/NOTE

PRESENT IN SETS:
PRESENT SUR LES APPAREILS:
ANWESEND IN GERÄTEN
PRESENTE SUI MODELLI:
PRESENTE SOBRE MODELLOS:

1) PAL I



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2246	D17	
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3004	C11	
3005	D11	
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4100	E 6	
5000	B 9	
5001	B 9	
5002	H 3	
5003	H 3	
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7003	J13	
7004	K15	
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P54	A5	21
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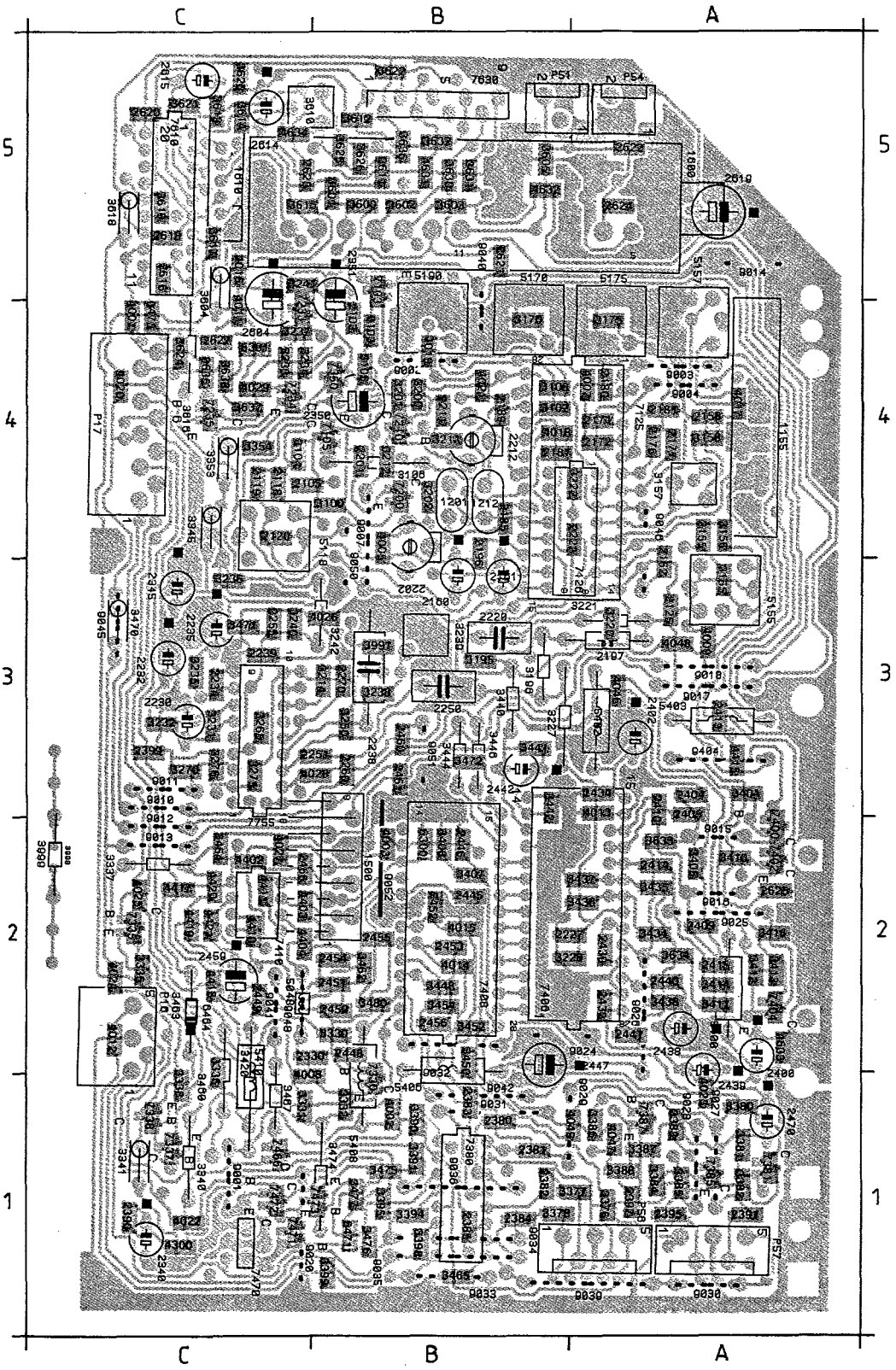
PIP panel



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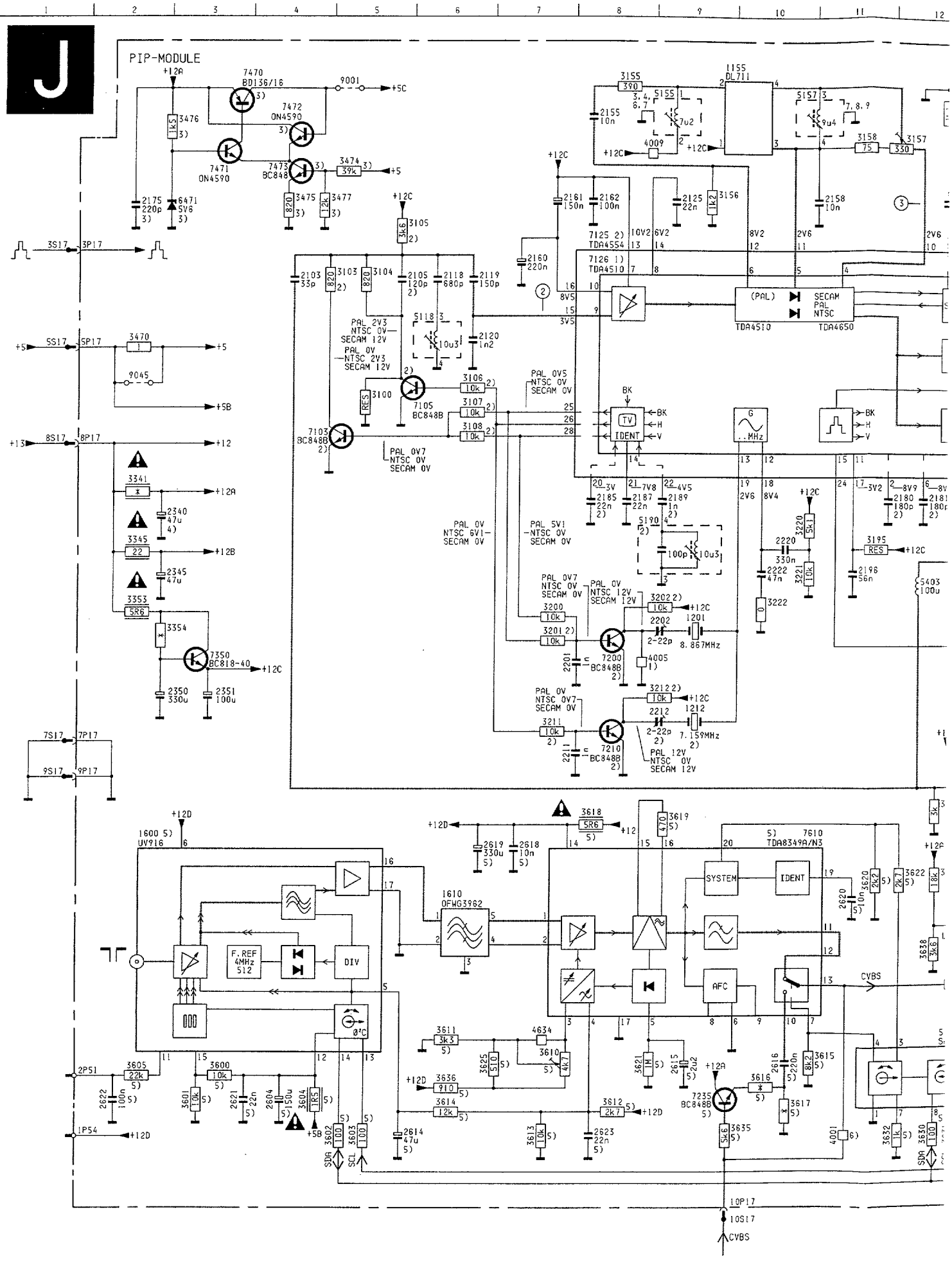
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+5C
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+5
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3477 12k
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3S17 3P17
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+5B
8S17 8P17
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7350 BC818-40
+12C
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2345 47u
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2351 100u
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9S17 9P17
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3103 820
3104 820
2105 120p
2118 680p
2119 150p
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PAL 0V NTSC 2V3 SECAM 12V
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3107 10k
3108 10k
3100 RES
7105 BC848B
7103 BC848B
PAL 0V7 NTSC 0V SECAM 0V
PAL 0V5 NTSC 0V SECAM 0V
PAL 0V NTSC 6V1 SECAM 0V
PAL 5V1 NTSC 0V SECAM 0V
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2155 10n
4009
1155 DL711
5157 9u4
3158 75
3157 330
2161 150n
2162 100n
2125 22n
1k2 3156
2158 10n
2160 220n
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7126 1) TDA4510
10V2 6V2 8V2 2V6
8V5 3V5
(PAL) SECAM PAL NTSC
TDA4510 TDA4650
BK TV IDENT H V
G ..MHz
2185 22n
2187 22n
2189 1n
5190 100p 10u3
3220 5k1
2220 330n
2222 47n
3221 10k
3222 0
3195 RES
2196 56n
5403 100u
2180 180p
3200 10k
3201 2) 10k
3202 2) 10k
2202 2-22p
1201 8.867MHz
2201 1n
7200 BC848B
4005 1)
3211 10k
2212 2-22p 2)
1212 7.159MHz 2)
2211 1n
7210 BC848B
PAL 12V NTSC 0V SECAM 12V
+12D
1600 5) UV916
1610 OFWG3962
F. REF 4MHz 512
DIV
Ø°C
2P51
1P54
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3601 10k
2622 100n
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2604 150n
3604 1R5
3602 100
3603 100
SDA
SCL
+5B
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3619 470
2619 330u
2618 10n
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SYSTEM
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AFC
CVBS
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3622 2k
3638 5k6
3611 3k3
4634
3610 4k7
3625 510
3636 910
3614 12k
3612 2k7
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2614 47u
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3621 1M
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3616
3617
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CVBS

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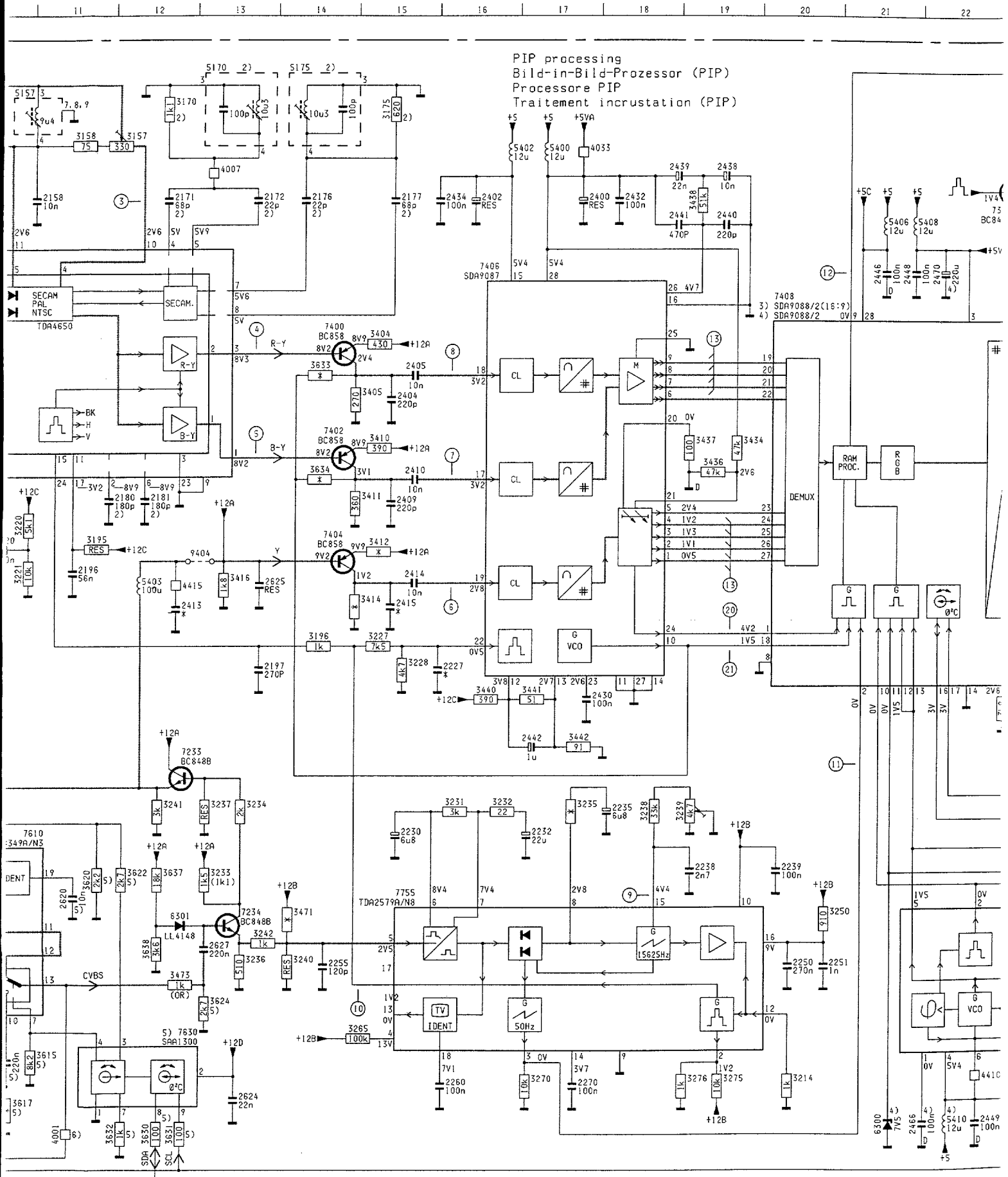

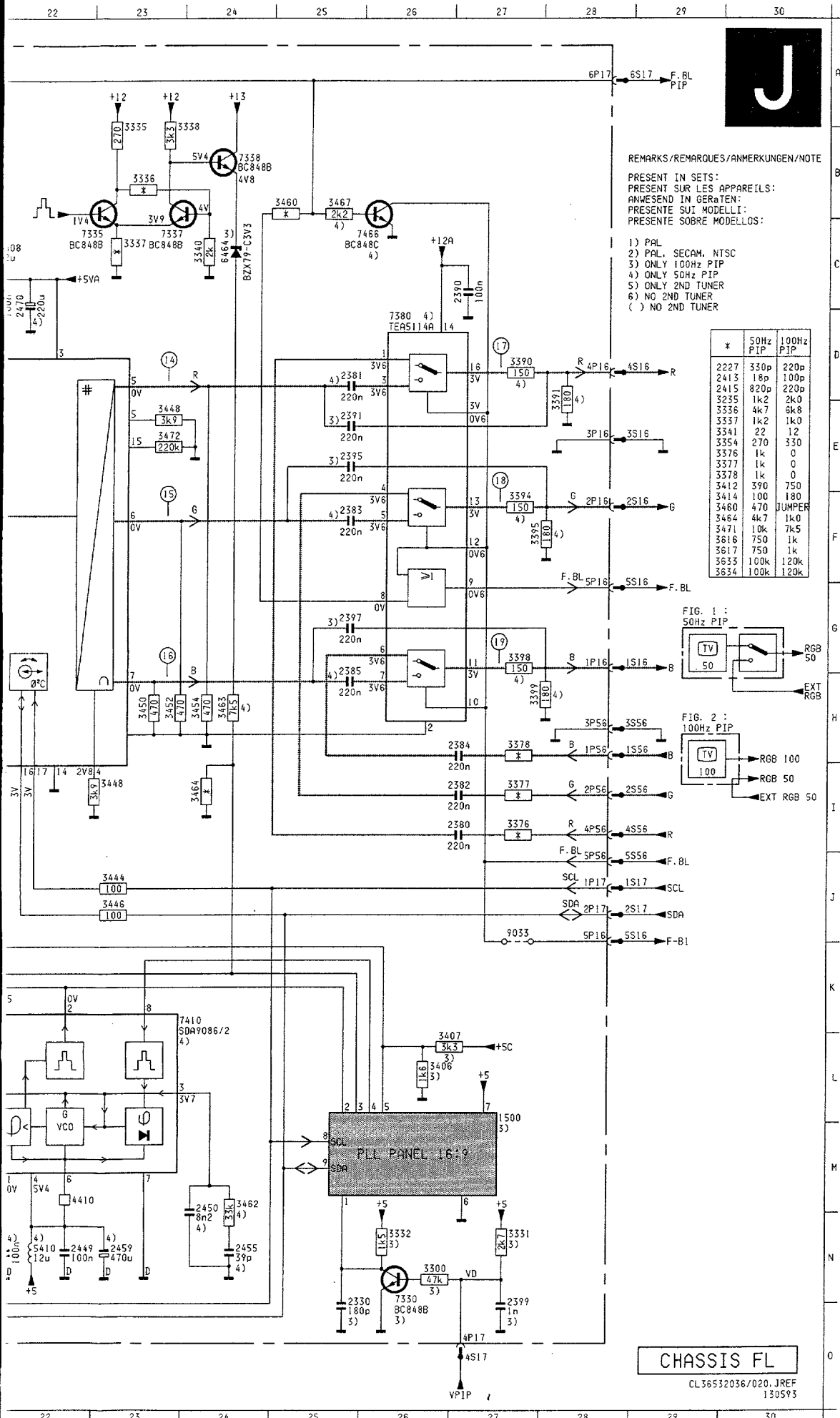

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	1610	K 6	3220	G10	4634	M 7
	2103	D 4	3221	G10	5118	D 5
	2105	D 5	3222	G10	5155	A 8
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	2119	D 6	3228	H15	5170	A13
	2120	D 6	3231	J16	5175	A14
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	2158	C11	3234	J13	5402	B16
	2160	C 7	3235	J17	5403	G12
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	2220	G10	3338	A23	7337	C23
	2222	G10	3340	C24	7338	B24
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	2239	K20	3377	I27	7406	C16
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F	2251	L20	3390	D27	7410	K23
	2255	L14	3391	D28	7466	C26
	2260	M16	3394	F27	7470	A 3
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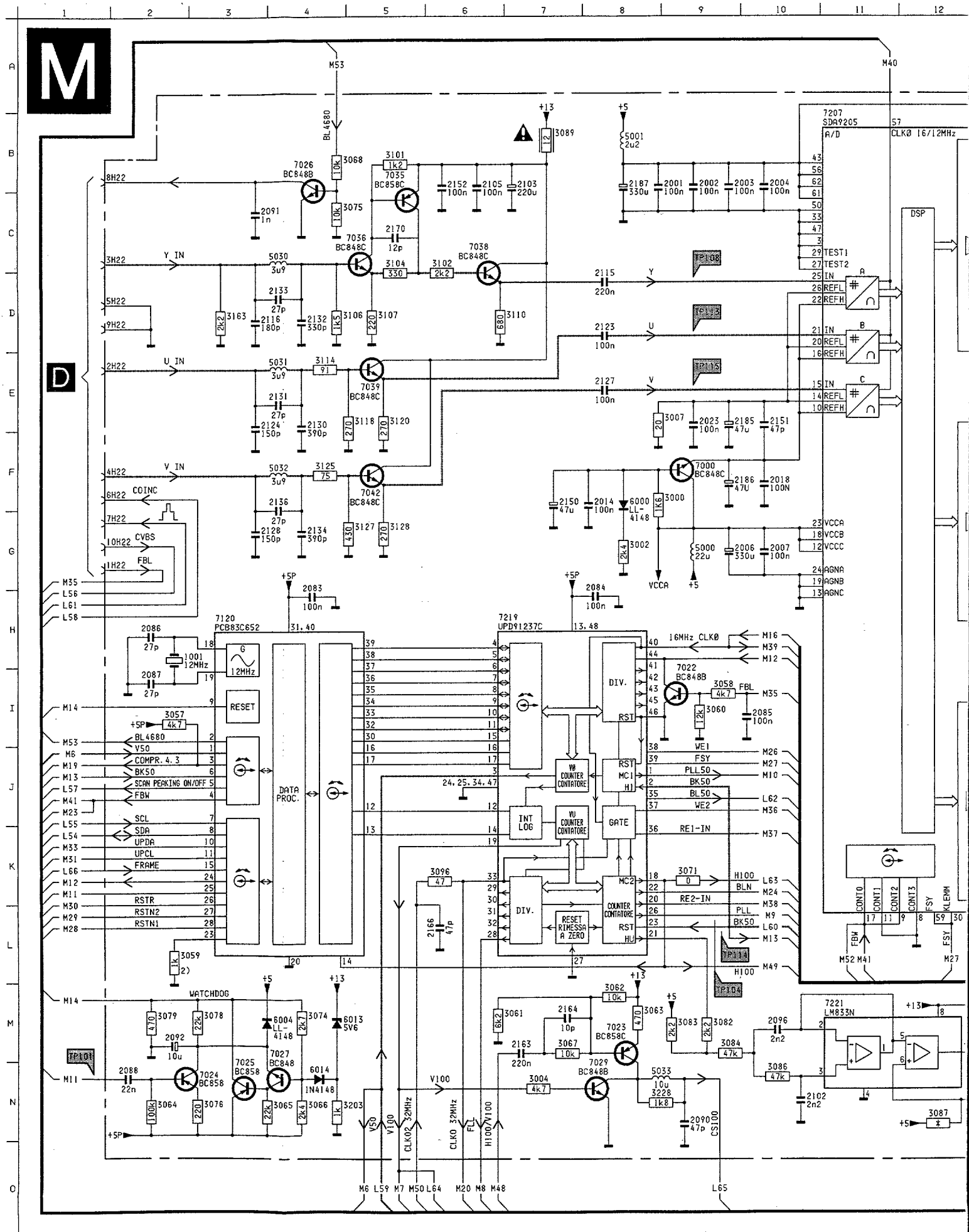
	2340	F 2	3399	H27	7473	B 4
	2345	G 2	3404	D15	7610	J11
	2350	I 2	3405	E15	7630	M13
G	2351	I 3	3406	L26	7755	K15
	2380	I27	3407	L26	9001	A 5
	2381	D25	3410	F15	9033	J27
	2382	I27	3411	F15	9045	E 2
	2383	F25	3412	G15	9404	G13
	2384	H27	3414	G15		
	2385	H25	3416	G13		
H	2390	C27	3434	E19		
	2391	E25	3436	F19		
	2395	E25	3437	E19		
	2397	G25	3438	C19		
	2399	O27	3440	I16		
	2400	C17	3441	I17		
	2402	C16	3442	I17		
	2404	E15	3444	J23		
I	2405	E15	3446	J23		
	2409	F15	3448	E23		
	2410	F15	3448	I23		
	2413	H12	3450	H23		
	2414	G15	3452	H23		
	2415	H15	3454	H24		
	2430	I17	3460	B25		
	2432	C18	3462	M24		
J	2434	C16	3463	H24		
	2438	B19	3464	I24		
	2439	B18	3467	B25		
	2440	C19	3470	D 2		
	2441	C18	3471	K14		
	2442	I17	3472	E23		
	2446	C21	3473	L12		
K	2448	C21	3474	B 5		
	2449	N22	3475	B 4		
	2450	M24	3476	B 3		
	2455	N24	3477	B 4		
	2459	N23	3600	M 3		
	2466	N21	3601	N 3		
	2470	C22	3602	N 5		
L	2604	N 4	3603	N 5		
	2614	N 5	3604	N 4		
	2615	M 9	3605	M 2		
	2616	M10	3610	M 7		
	2618	K 7	3611	M 6		
	2619	K 6	3612	N 8		
	2620	K11	3613	N 7		
	2621	N 3	3614	N 6		
M	2622	N 2	3615	M11		
	2623	N 8	3616	M10		
	2624	N13	3617	N10		
	2625	G13	3618	J 8		
	2627	L13	3619	J 9		
	3100	E 5	3620	K11		
	3103	C 5	3621	M 8		
	3104	C 5	3622	K12		
N	3105	C 5	3624	L13		
	3106	E 6	3625	M 6		
	3107	E 6	3630	N12		
	3108	E 6	3631	N12		
	3155	A 8	3632	N12		
	3156	B 9	3633	E14		
	3157	B12	3634	F14		
	3158	B11	3635	N10		
O	3170	A12	3636	M 6		
	3175	A15	3637	K12		
	3195	G11	3638	L12		
	3196	H14	4001	N11		
	3200	H 7	4005	H 8		

LFR box FLx.24/.26 (Digital Scan)



PCS 41741

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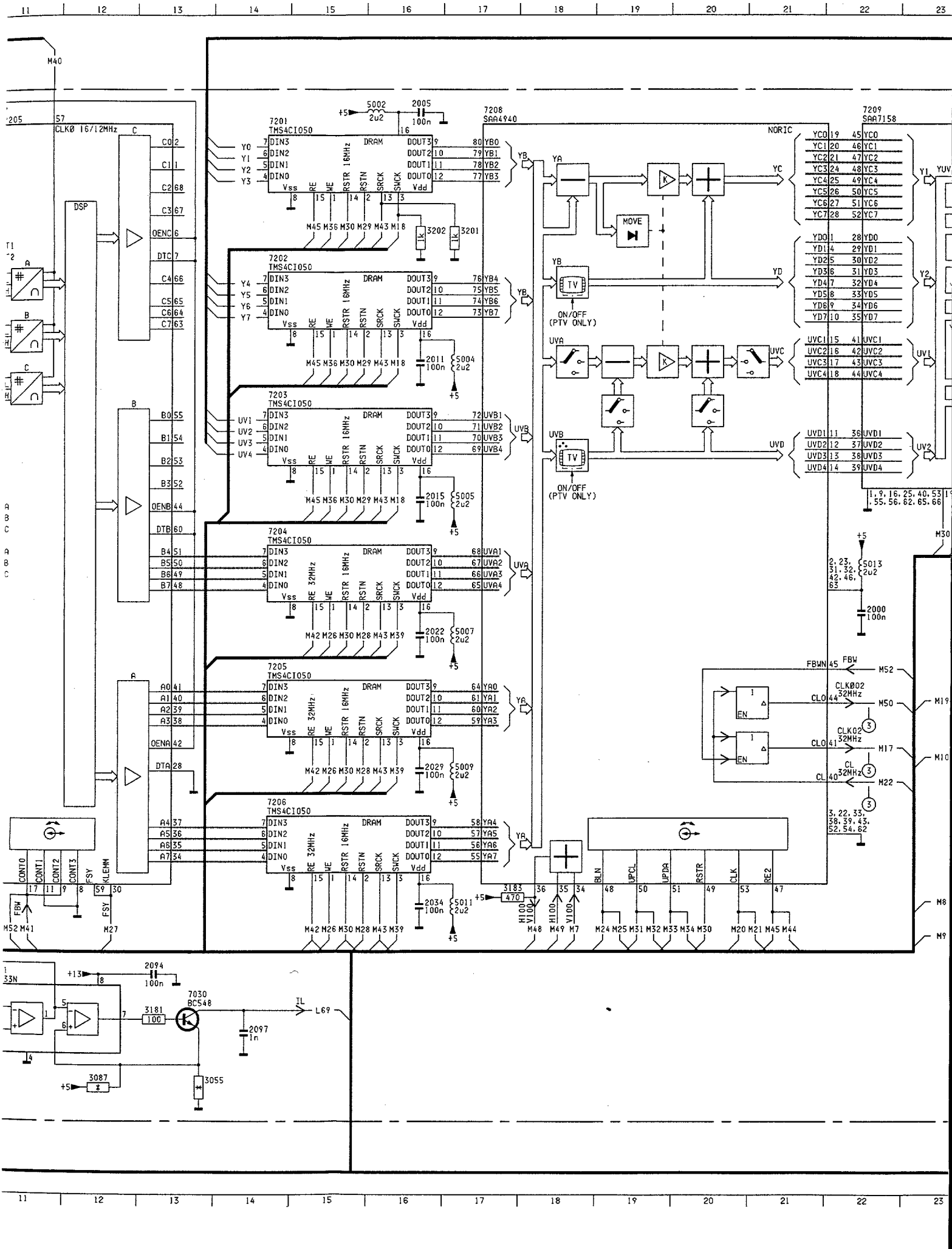
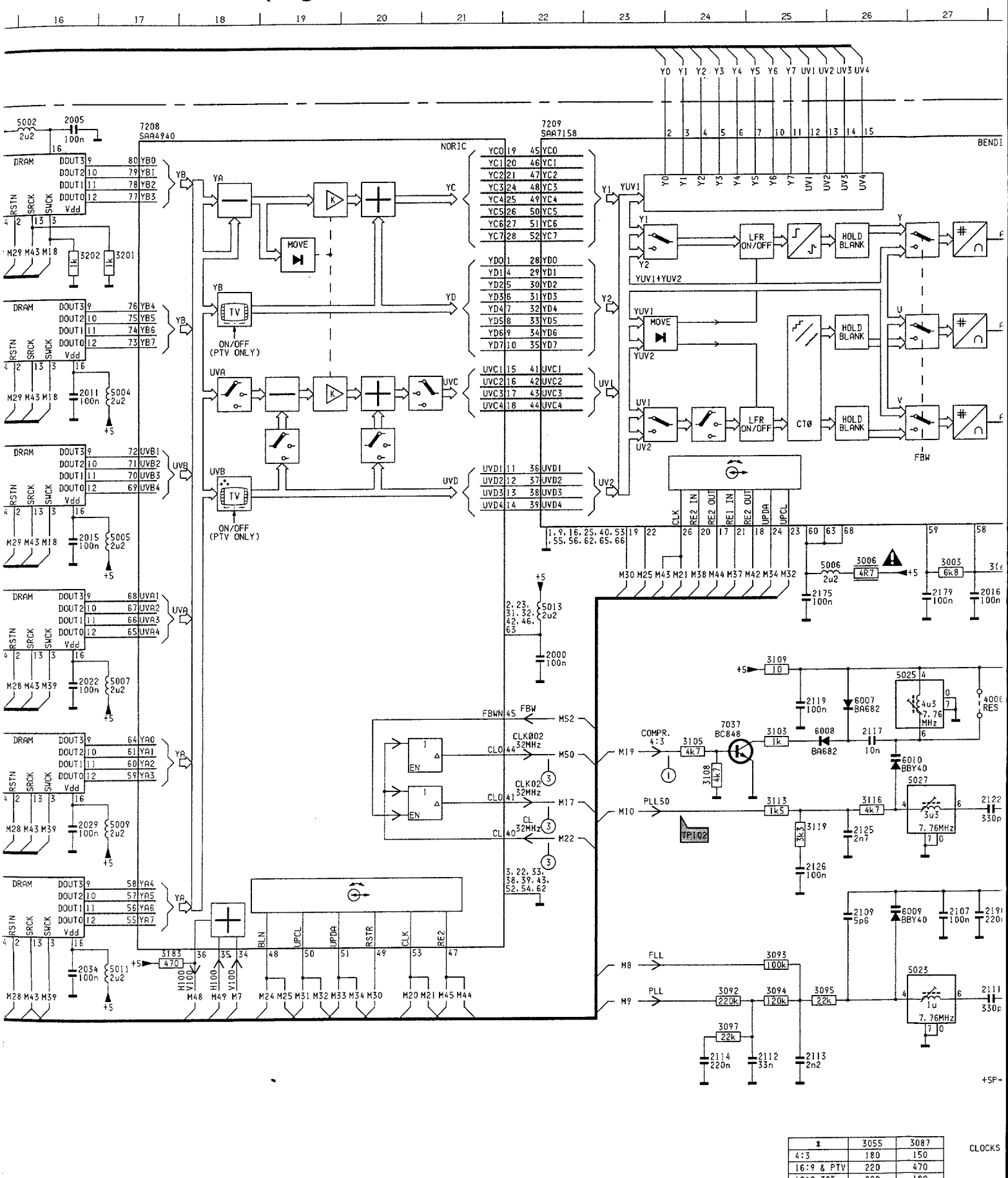
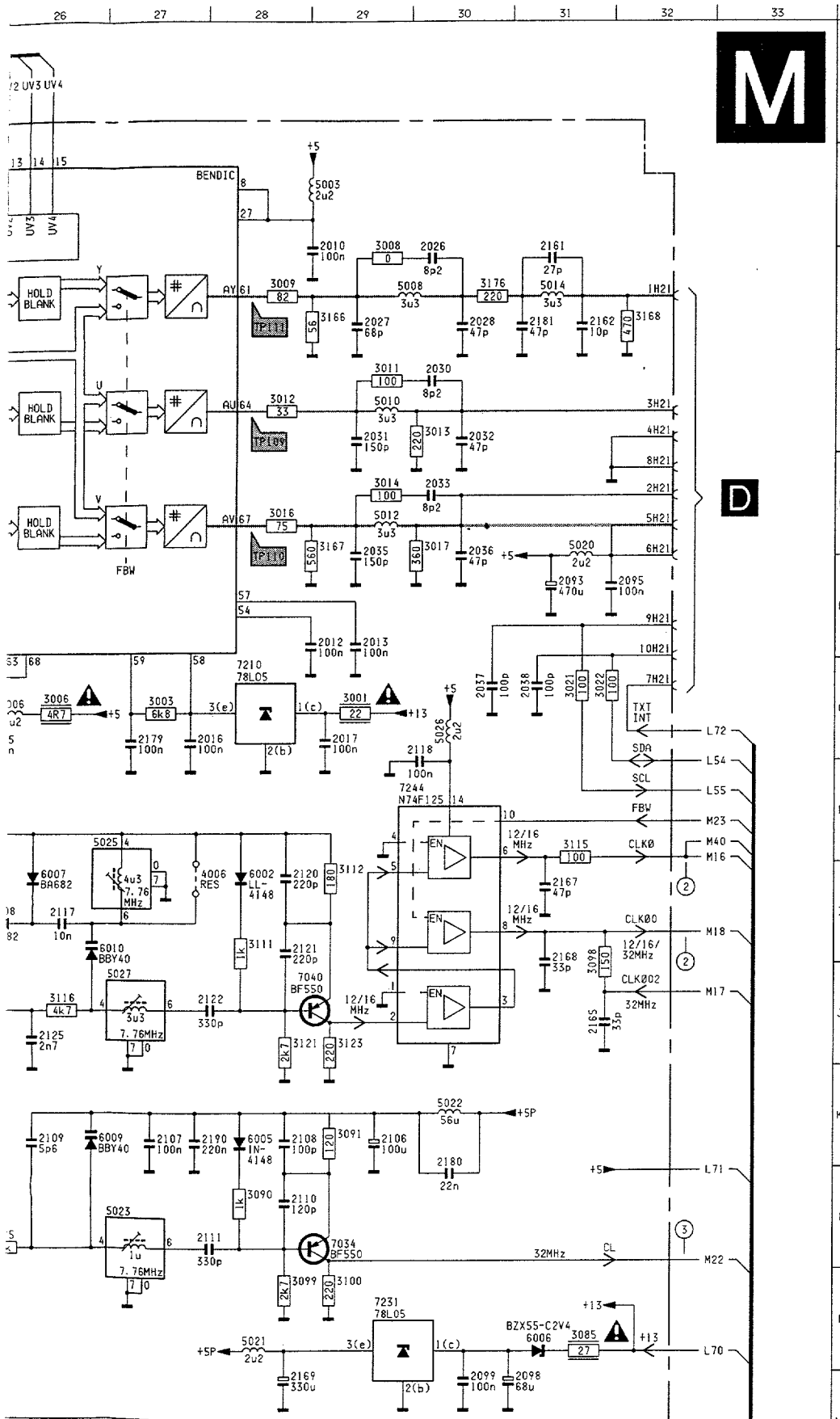




‡	3055	3087
4:3	180	150
16:9 & PTV	220	470
16:9 36"	200	180

CLOCKS

LFR box FLx.24/.26 (Digital Scan)



	3055	3087
	180	150
PTV	220	470
3"	200	180

	1001	H 2	3021	G31	7026	B 4
	2000	H22	3022	G31	7027	M 4
	2001	B 9	3055	N13	7029	N 8
	2002	B 9	3057	I 2	7030	M13
A	2003	B 9	3058	I 9	7034	L29
	2004	B10	3059	L 2	7035	B 5
	2005	B16	3060	I 9	7036	C 5
	2006	G 9	3061	M 6	7037	I24
	2007	G10	3062	M 8	7038	C 6
	2010	C29	3063	M 8	7039	E 5
	2011	E16	3064	N 2	7040	J29
	2012	F29	3065	N 4	7042	F 5
B	2013	F29	3066	N 4	7120	H 3
	2014	F 8	3067	M 7	7201	B14
	2015	G16	3068	B 4	7202	D14
	2016	G27	3071	K 9	7203	E14
	2017	G29	3074	M 4	7204	G14
	2018	F10	3075	C 4	7205	I14
	2022	H16	3076	N 3	7206	K14
	2023	E 9	3078	M 3	7207	B11
C	2026	C30	3079	M 2	7208	B17
	2027	C29	3082	M 9	7209	B22
	2028	C30	3083	M 9	7210	G28
	2029	J16	3084	M 9	7219	H 6
	2030	D30	3085	M31	7221	M11
	2031	D29	3086	N10	7231	M29
	2032	D30	3087	N12	7244	H29
D	2033	E30	3089	B 7		
	2034	L16	3090	L28		
	2035	F29	3091	K29		
	2036	F30	3092	L24		
	2037	G30	3093	L25		
	2038	G31	3094	L25		
	2083	H 4	3095	L25		
	2084	H 8	3096	K 6		
E	2085	I10	3097	M24		
	2086	H 2	3098	I31		
	2087	I 2	3099	M28		
	2088	N 2	3100	M29		
	2090	N 9	3101	B 5		
	2091	C 3	3102	C 6		
	2092	M 2	3103	I25		
	2093	F31	3104	C 5		
F	2094	M13	3105	I24		
	2095	F32	3106	D 4		
	2096	M10	3107	D 5		
	2097	N14	3108	J24		
	2098	N31	3109	H25		
	2099	N30	3110	D 7		
	2102	N10	3111	I28		
G	2103	B 7	3112	I29		
	2105	B 6	3113	J25		
	2106	K29	3114	E 4		
	2107	K27	3115	H31		
	2108	K28	3116	J26		
	2109	K26	3118	E 5		
	2110	L28	3119	J25		
H	2111	L28	3120	E 5		
	2112	M25	3121	J28		
	2113	M25	3123	J29		
	2114	M24	3125	F 4		
	2115	D 8	3127	G 5		
	2116	D 3	3128	G 5		
	2117	I26	3163	D 3		
	2118	G30	3166	C29		
I	2119	I25	3167	E29		
	2120	I28	3168	C32		
	2121	I28	3176	C30		
	2122	J28	3181	M13		
	2123	D 8	3183	L17		
	2124	E 3	3201	C17		
	2125	J26	3202	C16		
	2126	K25	3203	N 4		
J	2127	E 8	3228	N 8		
	2128	G 3	4006	I27		
	2130	E 4	5000	G 9		
	2131	E 4	5001	B 8		
	2132	D 4	5002	B16		
	2133	D 4	5003	B29		
	2134	G 4	5004	E17		
K	2136	F 4	5005	G17		
	2150	F 7	5006	G26		
	2151	E10	5007	H17		
	2152	B 6	5008	C29		
	2161	C31	5009	J17		
	2162	C31	5010	D29		
	2163	M 7	5011	L17		
	2164	M 7	5012	E29		
L	2165	J31	5013	G22		
	2166	L 6	5014	C31		
	2167	I31	5020	E31		
	2169	N28	5021	M28		
	2170	C 5	5022	K30		
	2175	G25	5023	L27		
	2179	G27	5025	H26		
M	2180	K30	5026	G30		
	2181	C31	5027	J27		
	2185	E 9	5030	C 4		
	2186	F 9	5031	E 4		
	2187	B 8	5032	F 4		
	2190	K27	5033	N 8		
	3000	F 9	6000	F 8		
	3001	G29	6002	I28		
N	3002	G 8	6004	M 4		
	3003	G27	6006	M31		
	3004	N 7	6007	I26		
	3006	G26	6008	I25		
	3007	E 9	6009	K26		
	3008	C29	6010	I26		
	3009	C28	6013	M 4		
	3011	D29	6014	N 4		
O	3012	D28	7000	F 9		
	3013	D30	7022	I 9		
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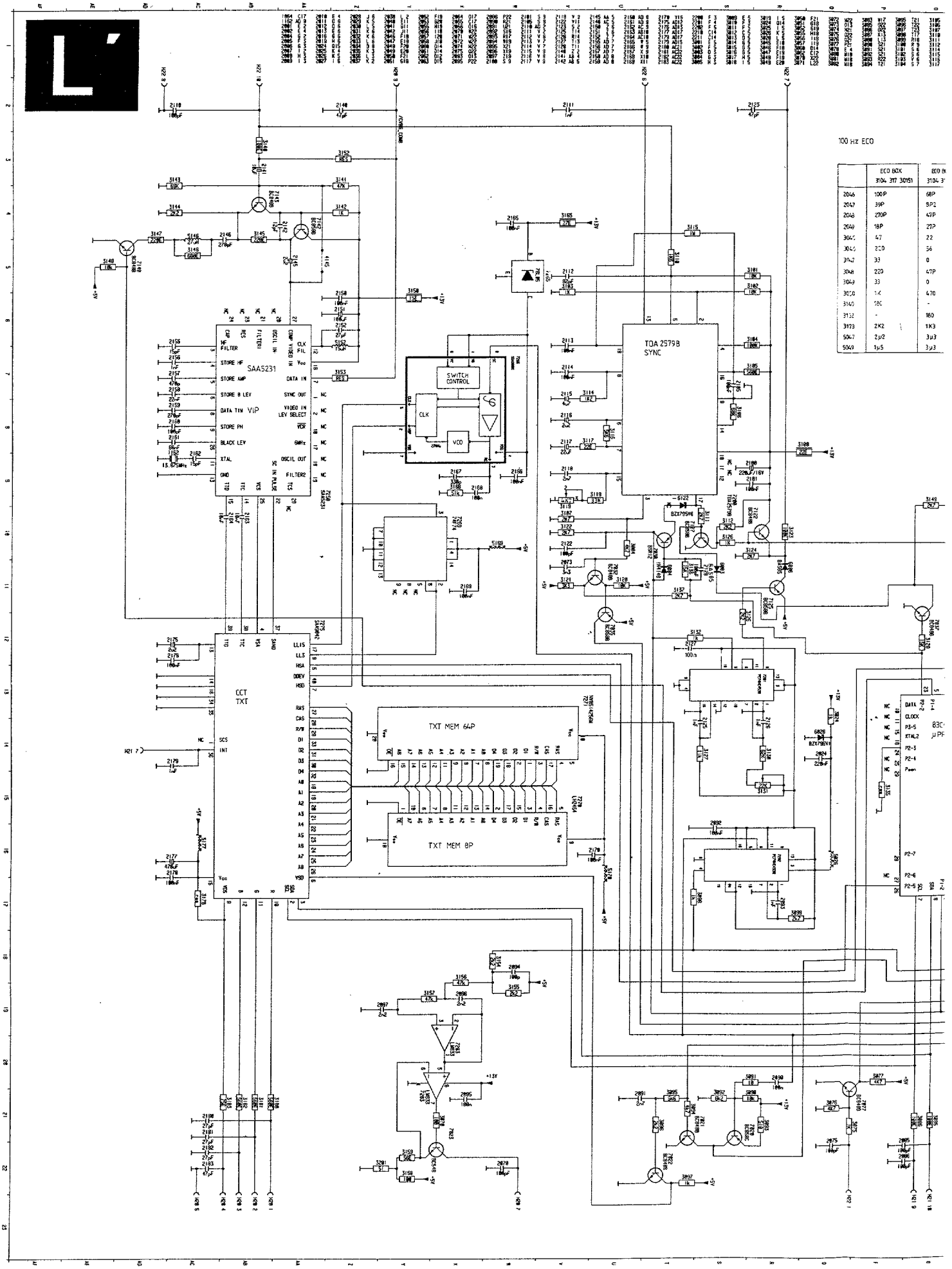
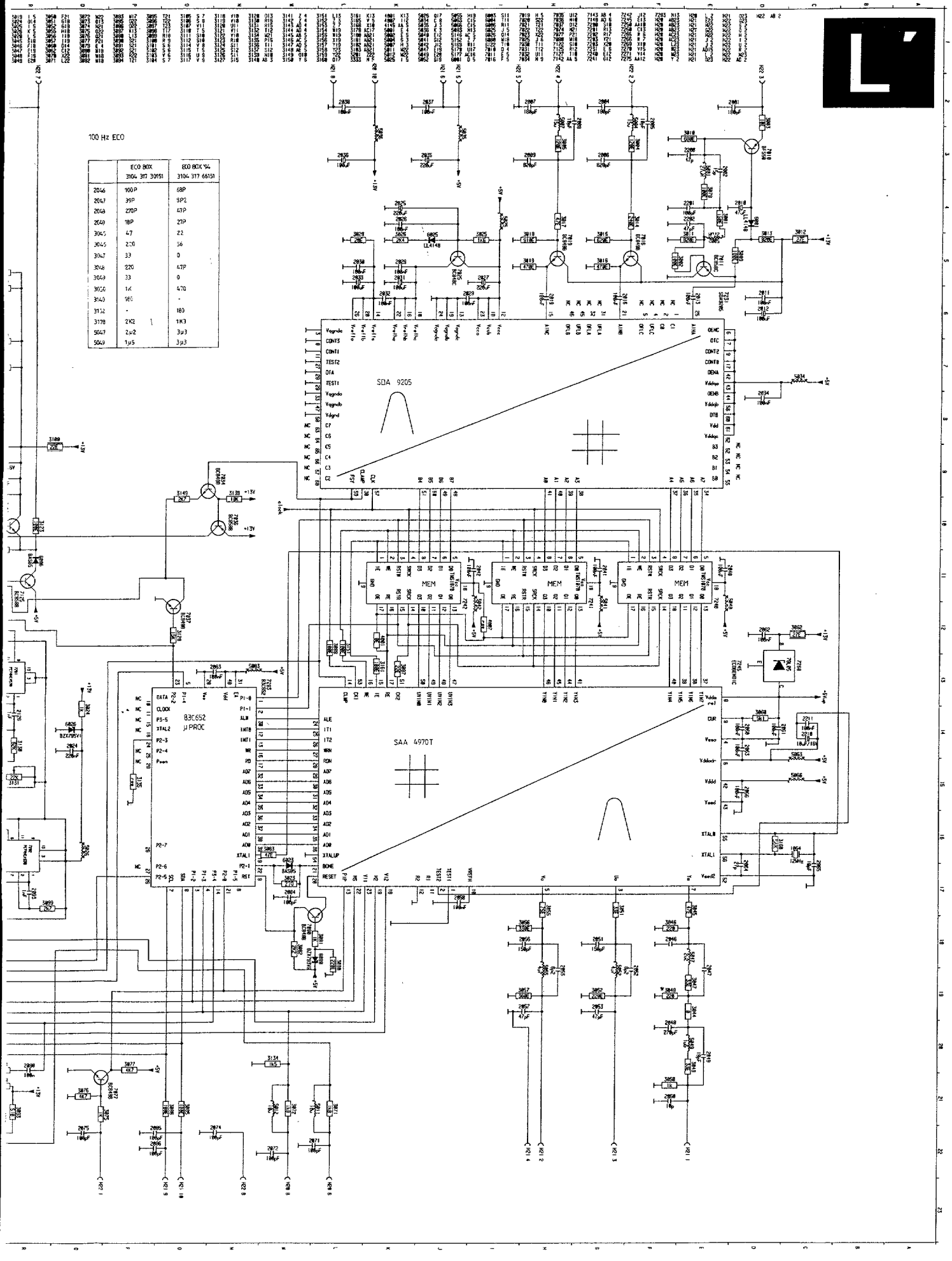
100 Hz / TXT (FLx.27)

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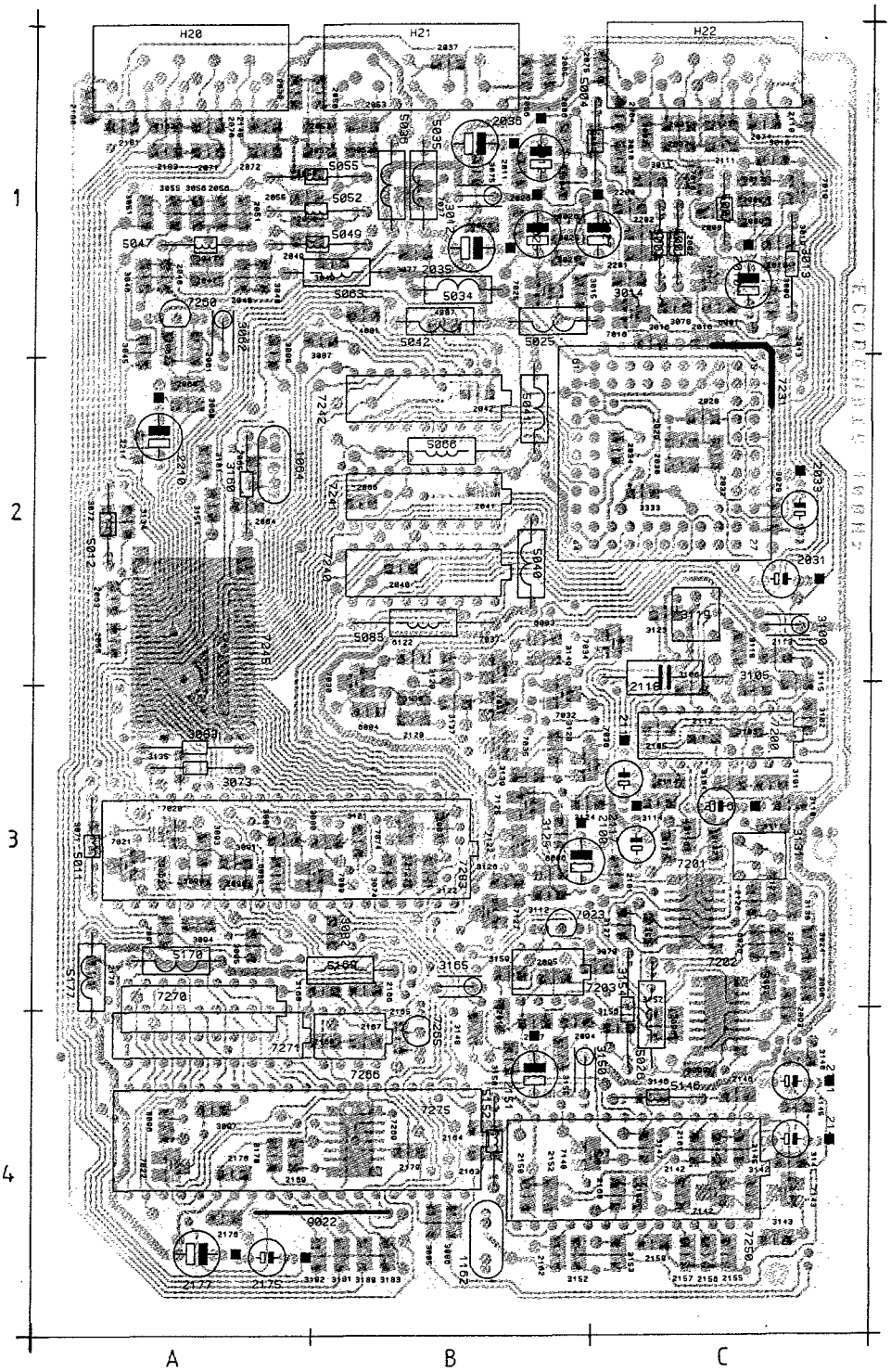
ECO BOX '94 3104 317 66151
2046 100P 68P
2047 39P 9P2
2048 270P 47P
2049 18P 27P
3045 47 22
3046 220 56
3047 33 0
3048 220 47P
3049 33 0
3050 1K 470
3140 100 -
3132 - 180
3178 2K2 1K3
5047 2µ2 3µ3
5049 1µ5 3µ3
SDA 9205
SAA 4970T
83C652 µPROC
MEM
MEM
MEM

100 Hz / TXT



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H21 B1	2016 C1	2038 A1	2060 A2	2091 A3	2116 C3	2152 B4	2170 A3	3005 C1
H22 C1	2019 C1	2040 B2	2061 A1	2092 C3	2117 C3	2155 C4	2175 A4	3009 C1
1064 A2	2024 C3	2041 B2	2062 A1	2093 C3	2118 C2	2156 C4	2176 A4	3010 C1
1162 B4	2025 B1	2042 B2	2063 A2	2094 B4	2122 B3	2157 C4	2177 A4	3011 C1
2001 C1	2026 B1	2046 A1	2064 A2	2095 B3	2123 C1	2158 C4	2178 A4	3012 B1
2002 C1	2027 C1	2047 A1	2065 A2	2096 C4	2125 C3	2159 C4	2179 B4	3013 C1
2004 C1	2028 C2	2048 A1	2066 B2	2097 B4	2126 C3	2160 C4	2181 A1	3014 C1
2005 C1	2029 C2	2049 A1	2070 A1	2100 B3	2127 C3	2161 C4	2182 A1	3015 B1
2006 B1	2030 C2	2050 B1	2071 A1	2101 C3	2128 B3	2162 B4	2183 A1	3016 C1
2007 C1	2031 C2	2051 A1	2072 A1	2105 C3	2140 A1	2163 B4	2200 C1	3017 C1
2008 C1	2032 C2	2052 A1	2074 C1	2110 C1	2141 C4	2164 B4	2201 C1	3018 C1
2009 C1	2033 C2	2053 B1	2075 C1	2111 C1	2142 C4	2165 B4	2202 C1	3019 C1
2010 C1	2034 C2	2055 A1	2083 B3	2112 C3	2145 C4	2166 B3	2210 A2	3024 C3
2011 B1	2035 B1	2056 A1	2085 B1	2113 C2	2146 C4	2167 B4	2211 A2	3025 B1
2012 B1	2036 B1	2057 B1	2086 B1	2114 C3	2150 B4	2168 B4	3003 C1	3026 B1

3028 C2	3159 B3	3143 C4	7200 C3					
3045 A1	3160 A2	3141 C4	7201 C3					
3046 A1	3161 A2	3142 C4	7202 C4					
3047 A1	3165 B3	3143 C4	7203 B3					
3048 A1	3168 B3	3144 C4	7231 C2					
3049 B1	3178 A4	3145 C4	7240 B2					
3050 A1	3180 B4	3146 C4	7241 B2					
3051 A1	3181 B4	3147 C4	7242 B2					
3052 B1	3182 B4	3148 B4	7245 A2					
3055 A1	3183 B4	3149 B2	7250 C4					
3056 A1	3201 B4	3150 B4	7260 A1					
3057 B1	3333 C2	3151 A2	7265 B4					
3060 A2	4001 B1	3152 B4	7266 B4					
3062 A1	4007 B1	3153 C4	7269 B4					
3070 C3	4145 C4	3154 C4	7270 A3					
3071 A3	5001 C1	3155 B4	7271 A4					
3072 A2	5002 C1	3156 C4	7275 A4					
3073 A3	5004 C1	3157 C4	7283 A3					
3074 B3	5007 C1	3158 B4	9022 B4					
3075 B1	5011 A3							
3076 B1	5012 A2							
3077 B1	5025 B1							
3078 C1	5026 C4							
3080 B3	5034 B1							
3081 A3	5035 B1							
3082 B3	5036 B1							
3083 A3	5040 B2							
3085 B4	5041 B2							
3086 B4	5042 B1							
3087 B1	5047 A1							
3088 A1	5049 B1							
3090 A3	5052 B1							
3091 A3	5055 B1							
3092 A3	5063 B1							
3093 A3	5066 B2							
3094 A3	5083 B2							
3095 A3	5146 C4							
3096 A4	5152 B4							
3097 A4	5169 B3							
3098 C3	5170 A3							
3099 C4	5177 A3							
3100 C2	6001 C1							
3101 C3	6003 B2							
3102 C3	6004 B3							
3103 C3	6006 B3							
3104 C3	6025 B1							
3105 C3	6026 C3							
3106 C3	6080 A3							
3110 C3	6122 B2							
3111 C3	7010 C1							
3112 B3	7011 C1							
3114 C3	7016 C1							
3115 C3	7019 C1							
3116 C3	7020 A3							
3117 C3	7021 A3							
3118 C2	7022 A4							
3119 C2	7023 B3							
3120 B3	7025 B1							
3121 B3	7030 B2							
3122 B3	7031 B3							
3123 C2	7032 B3							
3124 B3	7034 C2							
3125 B3	7035 B3							
3126 B3	7036 B3							
3127 C3	7037 B2							
3128 B2	7074 B3							
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3131 C3	7080 B3							
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3134 A2	7125 B3							
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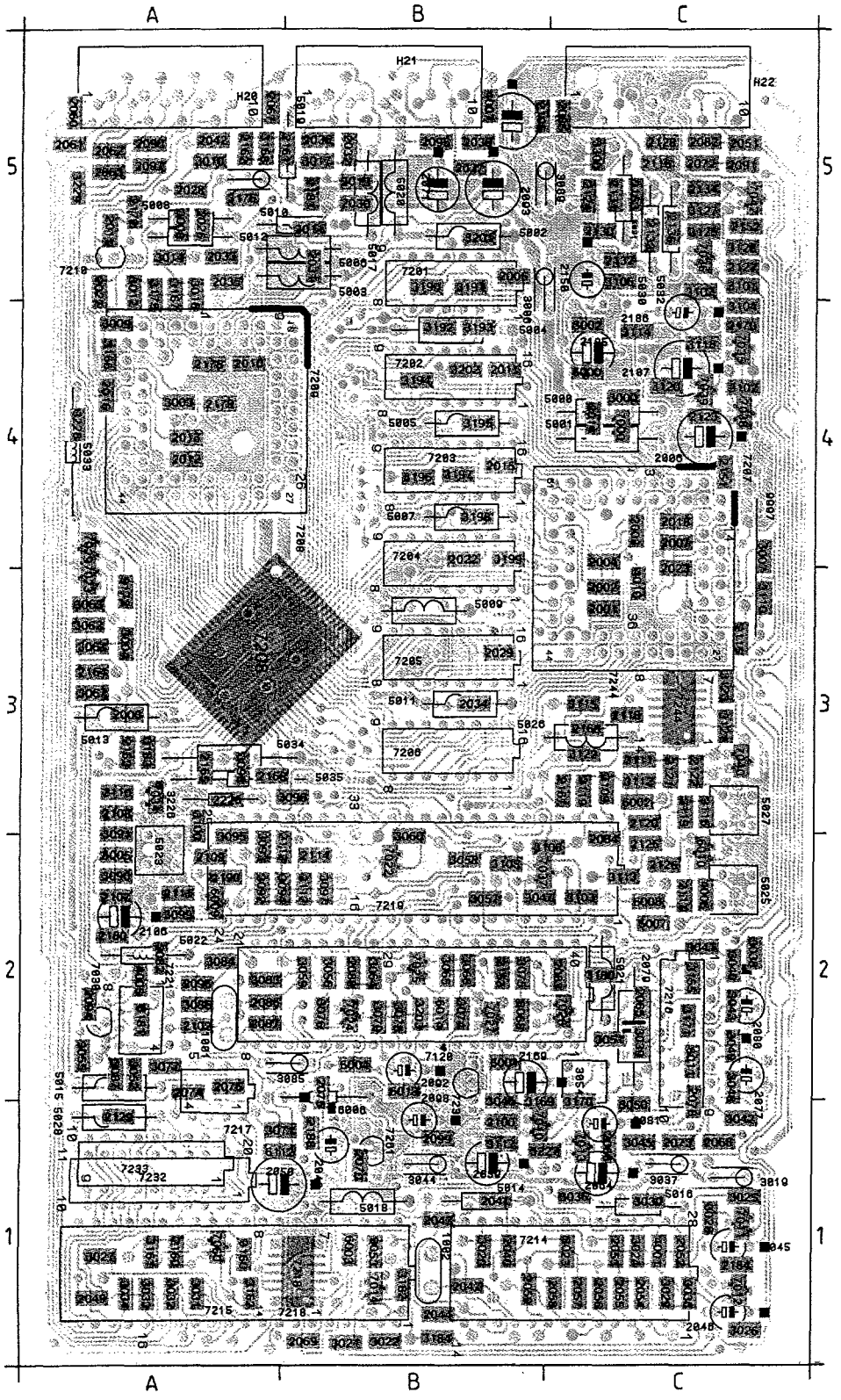
LFR box



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H21 B5	2014 C4	2035 A5	2051 C5	2068 C1	2084 C2	2102 A2	2119 C3	2136 C5	
H22 C5	2015 B4	2036 B5	2052 C1	2069 B1	2085 C5	2103 B5	2120 C3	2150 C5	
1001 A2	2016 A4	2037 B5	2053 C1	2070 B1	2086 A2	2105 B5	2121 C3	2151 C4	
1002 B1	2017 A5	2038 B5	2054 C1	2071 B5	2087 A2	2106 A2	2122 C3	2152 C5	
2000 A3	2018 C4	2039 B1	2055 C1	2072 C5	2088 B2	2107 A2	2123 C4	2153 B2	
2001 C3	2022 B4	2040 B1	2056 C1	2073 C1	2090 A5	2108 A3	2124 C5	2160 A1	
2002 C3	2023 C4	2041 B1	2057 C1	2074 A2	2091 C5	2109 A2	2125 C2	2161 A5	
2003 C4	2026 A5	2042 A5	2058 C1	2075 B2	2092 B2	2110 A3	2126 C2	2162 A5	
2004 C4	2027 A5	2043 B1	2059 B1	2076 A2	2093 B5	2111 A2	2127 C5	2163 A3	
2005 B5	2028 A5	2044 B1	2060 A5	2077 C2	2094 A2	2112 B2	2128 C5	2164 A3	
2006 C4	2029 B3	2045 C1	2062 A5	2078 C1	2095 B5	2113 A2	2129 A1	2165 A3	
2007 C4	2030 B5	2046 C1	2063 A5	2079 C2	2096 A2	2114 B2	2130 C5	2166 A3	
2010 A4	2031 B5	2047 B1	2064 C1	2080 C2	2097 A5	2115 C3	2131 C5	2167 C3	
2011 B4	2032 B5	2048 B1	2065 C2	2081 C1	2098 B1	2116 C5	2132 C5	2168 C3	
2012 A4	2033 A5	2049 A1	2066 C1	2082 C5	2099 B1	2117 C2	2133 C5	2169 B2	

2170 C4	3092 A2	5018 B1							
2172 A5	3093 A2	5019 B5							
2175 A4	3094 A2	5020 B5							
2179 A4	3095 A2	5021 C2							
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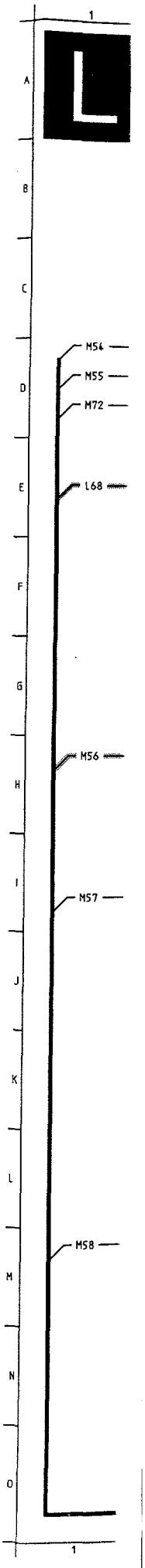
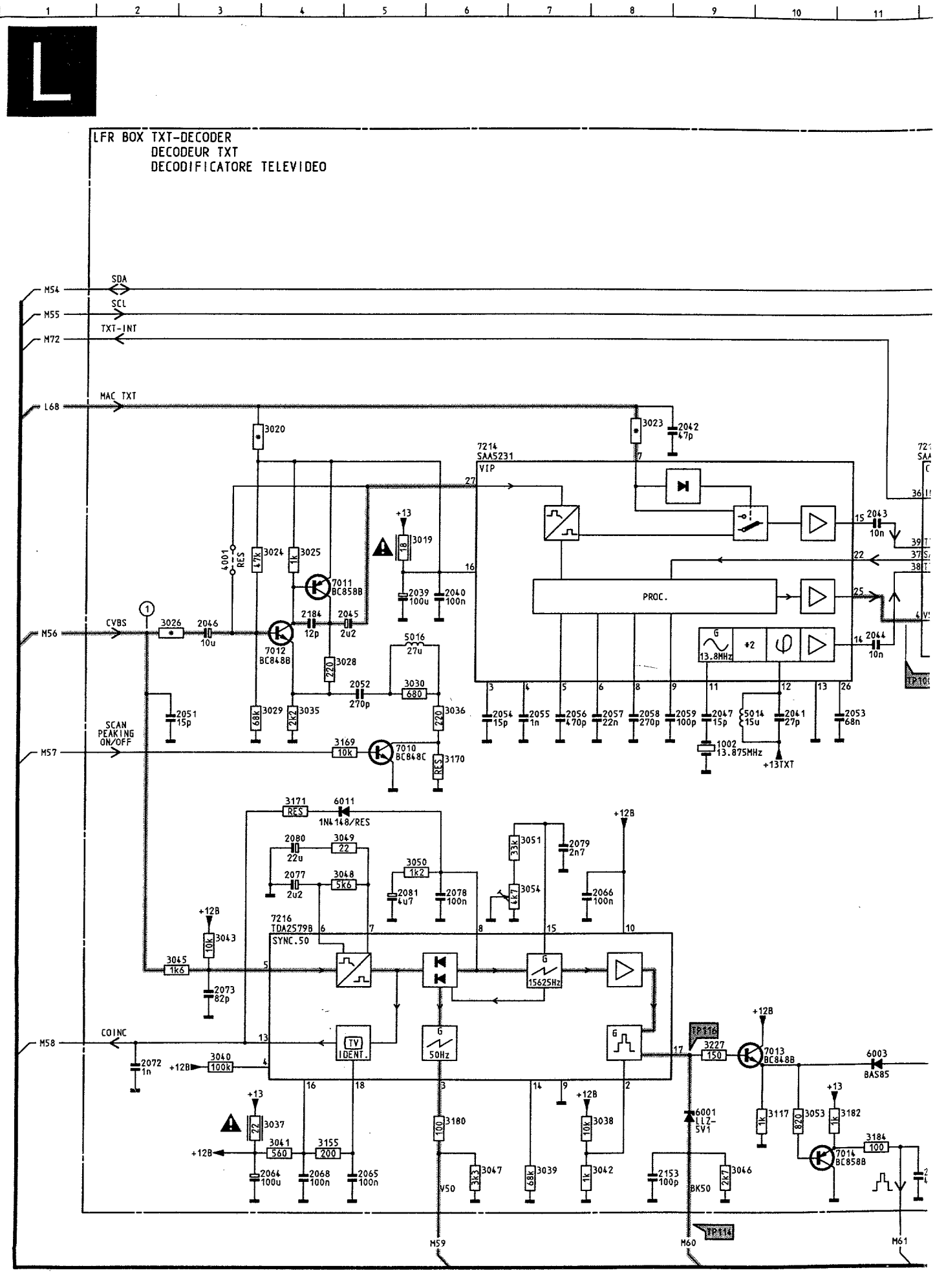
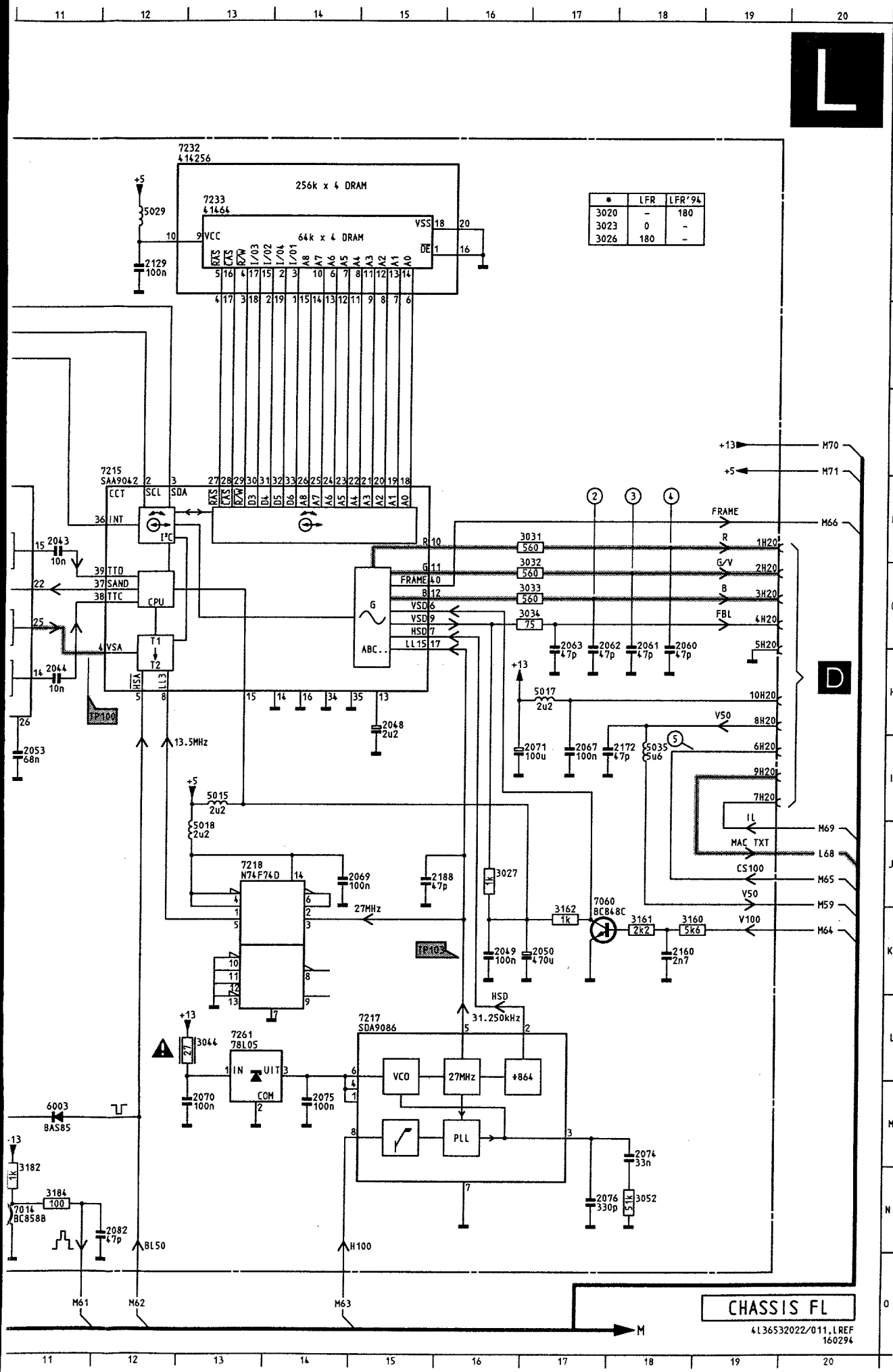
2181 B5	3097 B2	5023 A2							
2184 C1	3098 A3	5025 C2							
2185 C4	3099 A2	5026 C3							
2186 C4	3100 A3	5027 C3							
2187 C4	3101 C5	5028 A1							
2188 B1	3102 C4	5030 C5							
2190 A2	3103 C2	5031 C5							
2226 A3	3104 C4	5032 C5							
3000 C4	3105 B2	5033 A4							
3001 A5	3106 C5	5034 A3							
3002 C4	3107 C5	5035 A3							
3003 A4	3108 B2	6000 C4							
3004 A3	3109 C3	6001 B2							
3006 B5	3110 C3	6002 C3							
3007 C4	3111 C3	6003 B1							
3008 A5	3112 C3	6004 B2							
3009 A4	3113 C2	6005 A2							
3010 A5	3114 C4	6006 B2							
3011 B5	3115 C3	6007 C2							
3012 A5	3116 C3	6008 C2							
3013 B5	3117 B1	6009 A2							
3014 A5	3118 C4	6010 C2							
3016 A5	3119 C3	6011 C2							
3017 B5	3120 C4	6013 B2							
3019 C1	3121 C3	6014 B2							
3020 B1	3122 C3	6112 A1							
3021 B1	3123 C3	7000 C4							
3022 B1	3125 C5	7010 B1							
3023 C1	3127 C5	7011 C1							
3024 C1	3128 C5	7012 C1							
3025 C1	3155 C2	7013 C1							
3026 C1	3160 A1	7014 B1							
3027 A1	3161 A1	7022 B2							
3028 C1	3162 A1	7023 A3							
3029 C1	3163 C5	7024 B2							
3030 C1	3166 A4	7025 B2							
3031 A1	3167 A5	7026 C2							
3032 A1	3168 A5	7027 B2							
3033 A1	3169 B1	7029 A4							
3034 A1	3170 C1	7030 A2							
3035 C1	3171 C2	7034 A3							
3036 C1	3172 A3	7035 C4							
3037 C1	3175 A5	7036 C5							
3038 C2	3176 A5	7037 B2							
3039 C2	3180 C2	7038 C4							
3040 C2	3181 A2	7039 C4							
3041 C2	3182 B1	7040 C3							
3042 C1	3183 A3	7042 C5							
3043 C2	3184 B1	7060 A1							
3044 B1	3190 B5	7120 B2							
3045 C1	3191 B5	7201 B5							
3046 B1	3192 B4	7202 B4							
3047 B2	3193 B4	7203 B4							
3048 C2	3194 B4	7204 B4							
3049 C2	3195 B4	7205 B3							
3050 C1	3196 B4	7206 B3							
3051 C2	3197 B4	7207 C4							
3052 A2	3198 B4	7208 A3							
3053 B1	3199 B4	7209 A4							
3054 C2	3201 B5	7210 A5							
3055 A2	3202 B4	7214 C1							
3056 B2	3203 B2	7215 A1							
3057 B2	3226 A3	7216 C2							
3058 B2	3227 B1	7217 A2							
3059 B2	3228 A4	7218 B1							
3060 B2	3229 A5	7219 B2							
3061 A3	3300 C5	7221 A2							
3062 A3	4001 C1	7231 B2							
3063 A3	4005 A2	7232 A1							
3064 B2	4006 C2	7233 A1							
3065 B2	4007 B5	7244 C3							
3066 B2	4010 C3	7261 B1							
3067 A3	5000 C4	9997 C4							
3068 B2	5001 C4								
3071 A1	5002 B5								
3074 B2	5003 B5								
3075 B2	5004 B4								
3076 B2	5005 B4								
3077 A2	5006 B5								
3078 B2	5007 B4								
3079 B2	5008 A5								
3082 A2	5009 B3								
3083 A2	5010 B5								
3084 A2	5011 B3								
3085 B2	5012 A5								
3086 A2	5013 A3								
3087 A2	5014 B1								
3089 B5	5015 A2								
3090 A2	5016 C1								
3091 A3	5017 B5								



LFR box (Digital Scan)

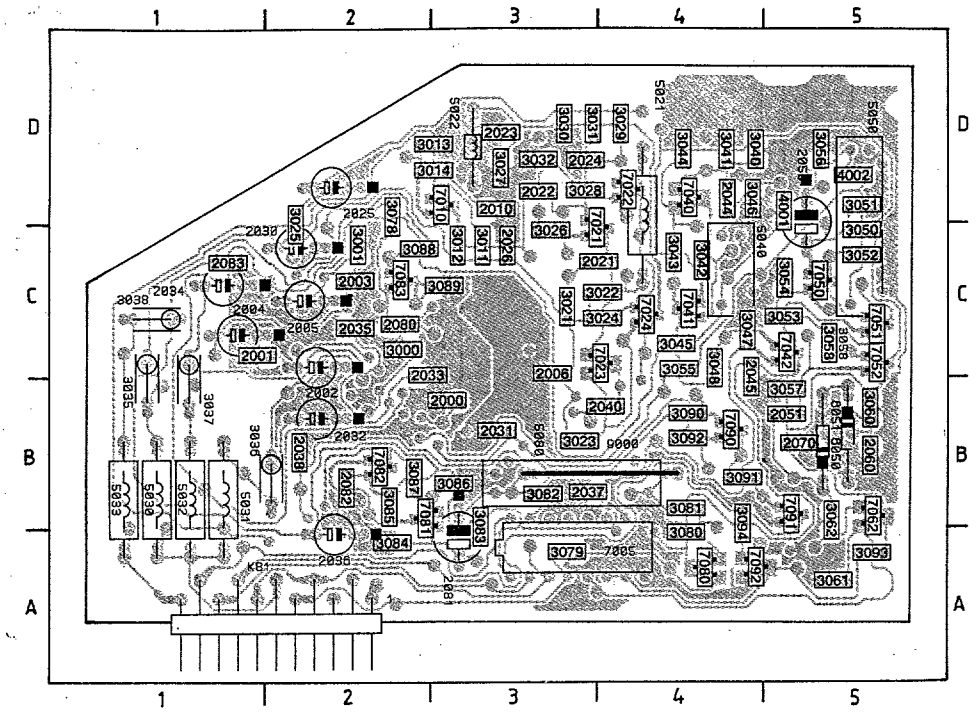


LFR box (Digital Scan)



*	LFR	LFR'94
3020	-	180
3023	0	-
3026	180	-

1002	I 9	7217	L15	
2039	G 5	7218	J13	
2040	G 6	7232	B12	
2041	I10	7233	B13	
A 2042	E 9	7261	L13	
2043	F11			
2044	H11			
2045	H 5			
2046	H 3			
2047	I 9			
2048	H15			
2049	K16			
B 2050	K17			
2051	I 3			
2052	H 5			
2053	I11			
2054	I 6			
2055	I 7			
2056	I 7			
2057	I 8			
C 2058	I 8			
2059	I 9			
2060	H18			
2061	H18			
2062	H17			
2063	H17			
2064	N 4			
D 2065	N 5			
2066	K 8			
2067	I17			
2068	N 4			
2069	J14			
2070	M13			
2071	I16			
2072	M 2			
E 2073	L 3			
2074	M18			
2075	M14			
2076	N17			
2077	K 4			
2078	K 6			
2079	J 7			
F 2080	J 4			
2081	K 5			
2082	N12			
2129	C12			
2153	N 8			
2160	K18			
2172	I18			
2184	H 4			
G 2188	J15			
3019	G 5			
3020	E 4			
3023	E 8			
3024	G 4			
3025	G 4			
3026	H 2			
H 3027	J16			
3028	H 4			
3029	I 4			
3030	H 5			
3031	F17			
3032	G17			
3033	G17			
3034	G17			
I 3035	I 4			
3036	I 6			
3037	N 4			
3038	N 8			
3039	N 7			
3040	M 3			
3041	N 4			
J 3042	N 8			
3043	K 3			
3044	L13			
3045	L 3			
3046	N 9			
3047	N 6			
3048	K 5			
3049	J 5			
K 3050	K 5			
3051	J 7			
3052	N18			
3053	M10			
3054	K 7			
3117	M10			
3155	N 4			
L 3160	K18			
3161	K18			
3162	K17			
3169	I 5			
3170	I 6			
3171	J 4			
3180	N 6			
3182	M11			
M 3184	N11			
3227	M 9			
4001	G 3			
5014	I 9			
5015	I13			
5016	H 5			
5017	H17			
N 5018	J13			
5035	I18			
6001	N 9			
6003	M11			
6011	J 5			
7010	I 5			
7011	G 4			
7012	H 4			
7013	M10			
O 7014	N11			
7060	J17			
7214	F 6			
7215	F12			
7216	K 4			



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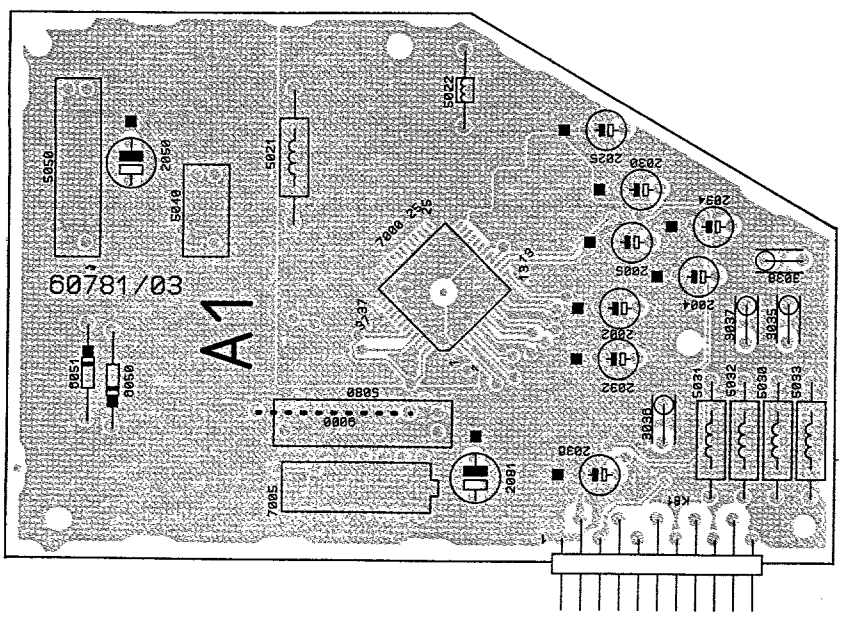
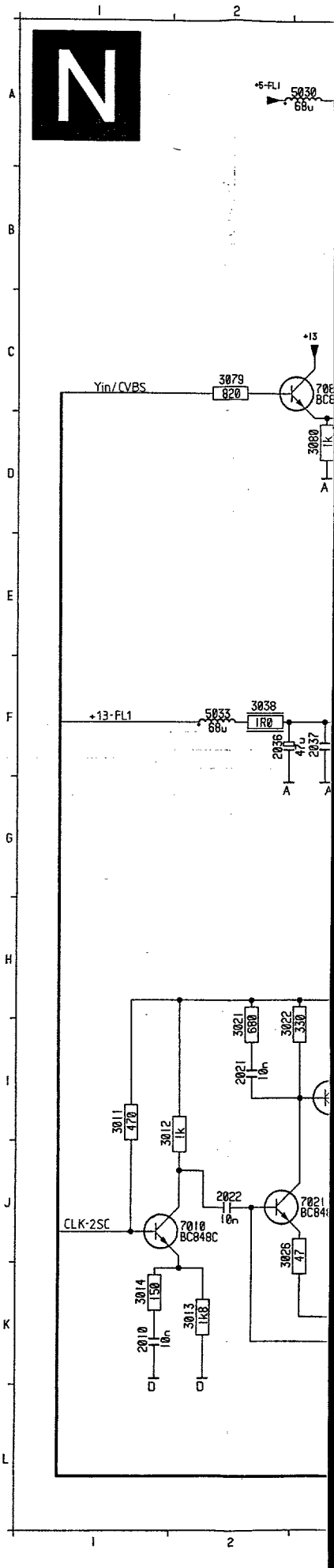
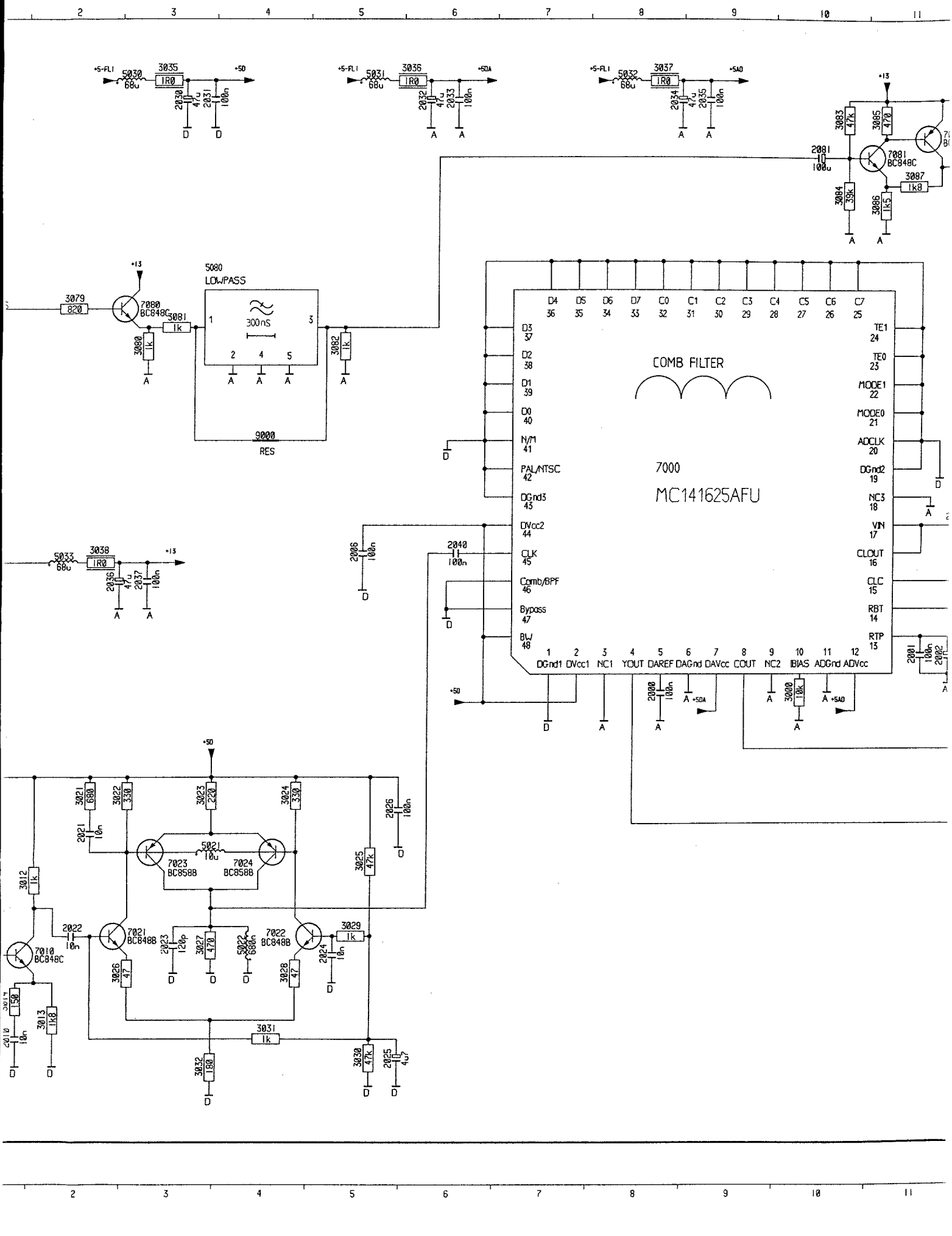
2001 C1	2033 C3	2083 C1	3030 D3	3050 C5	3082 B3	5022 D3	7024 C4	
2002 C2	2034 C1	3000 C2	3031 D4	3051 D5	3083 B3	5030 B1	7040 D4	
2003 C2	2035 C2	3001 C2	3032 D3	3052 C5	3084 A2	5031 B1	7041 C4	
2004 C1	2036 A2	3011 C3	3035 B1	3053 C5	3085 B2	5032 B1	7042 C5	
2005 C2	2037 B3	3012 C3	3036 B2	3054 C5	3086 B3	5033 B1	7050 C5	
2006 C3	2038 B2	3013 D3	3037 B1	3055 C4	3087 B2	5040 C4	7051 C5	
2010 D3	2040 B4	3014 D3	3038 C1	3056 D5	3088 C2	5050 C5	7052 C5	
2021 C4	2044 D4	3021 C3	3040 D4	3057 B5	3089 C3	5080 B3	7062 B5	
2022 D3	2045 C4	3022 C4	3041 D4	3058 C5	3090 B4	6050 B5	7080 A4	
2023 D3	2050 D5	3023 B3	3042 C4	3060 B5	3091 B4	6051 B5	7081 B2	
2024 D3	2051 B5	3024 C4	3043 C4	3061 A5	3092 B4	7000 C3	7082 B2	
2025 D2	2060 B5	3025 D2	3044 D4	3062 B5	3093 A5	7005 A3	7083 C2	
2026 C3	2070 B5	3026 C3	3045 C4	3078 D2	3094 B4	7010 D3	7090 B4	
2030 C2	2080 C2	3027 D3	3046 D4	3079 A3	4001 D5	7021 C4	7091 B5	
2031 B3	2081 A3	3028 D3	3047 C4	3080 A4	4002 D5	7022 D4	7092 A4	

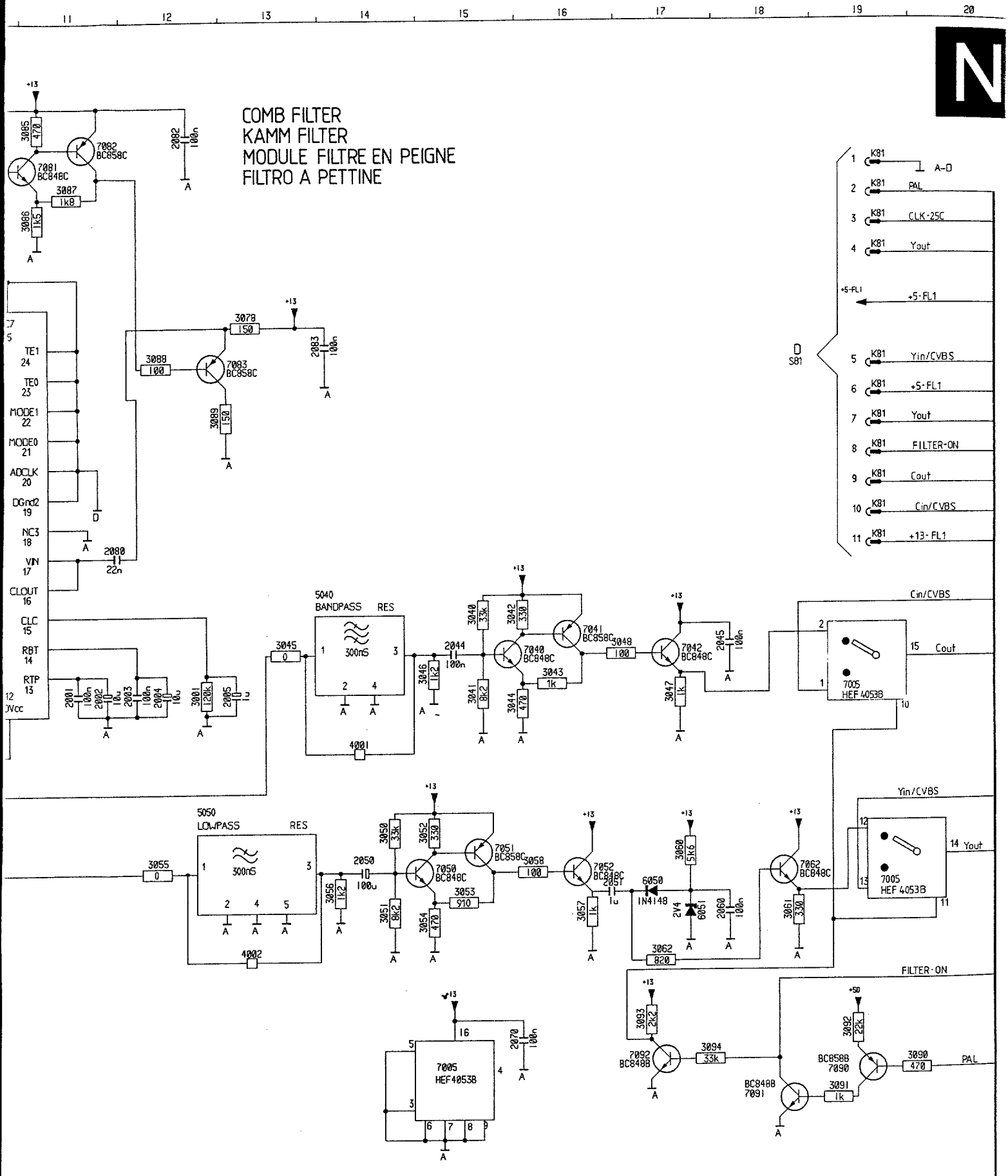


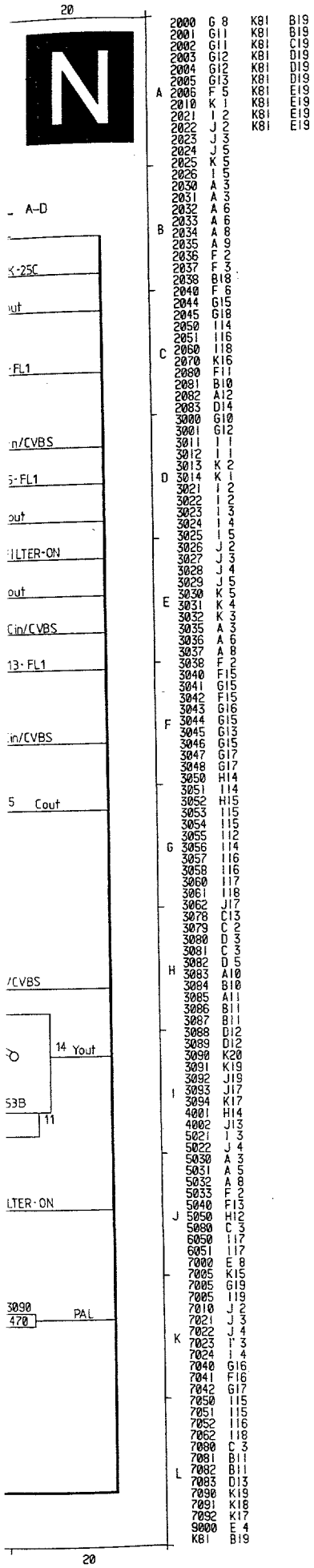


Comb filter / Kamm-Filter / Filtre en peigne

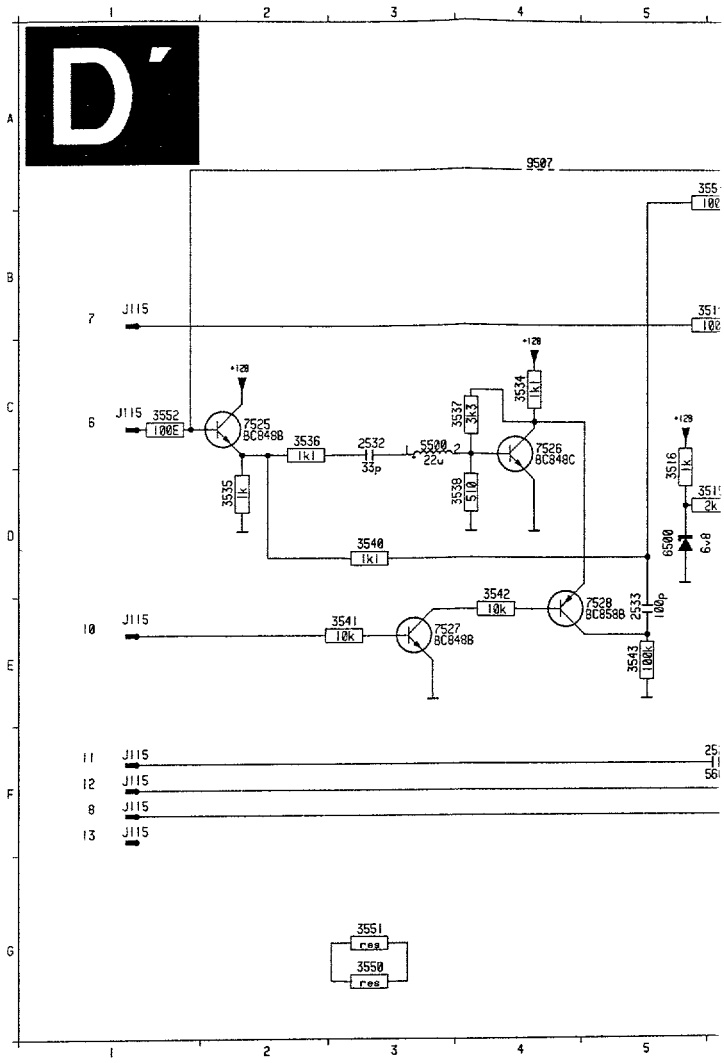


COMB FILTER
KAMM FILTER
MODULE FILTRE EN PEIGNE
FILTRO A PETTINE

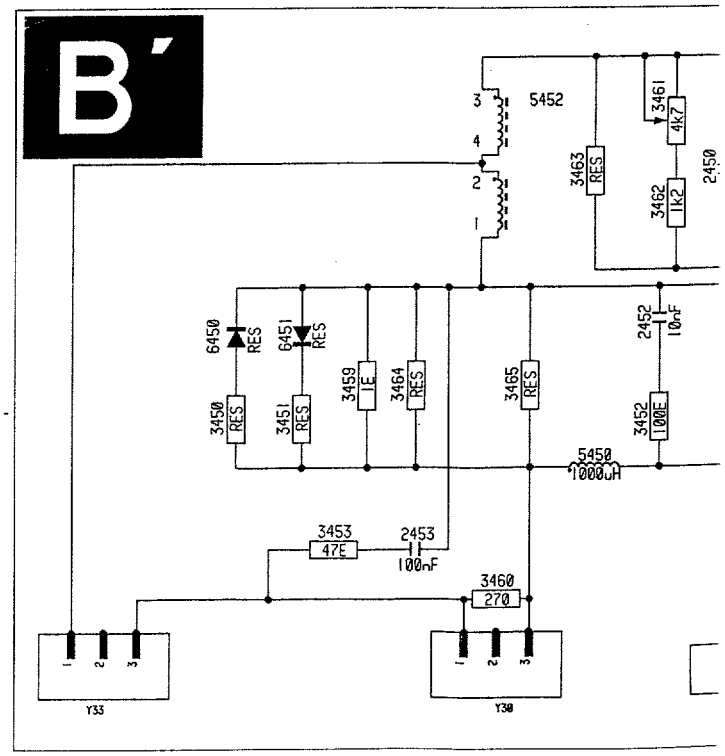



20
N
A–D
K-25C
ut
FL1
n/CVBS
5-FL1
out
ILTER-ON
out
Cin/CVBS
13-FL1
in/CVBS
5 Cout
/CVBS
14 Yout
53B
11
LTER-ON
3090
470
PAL
20

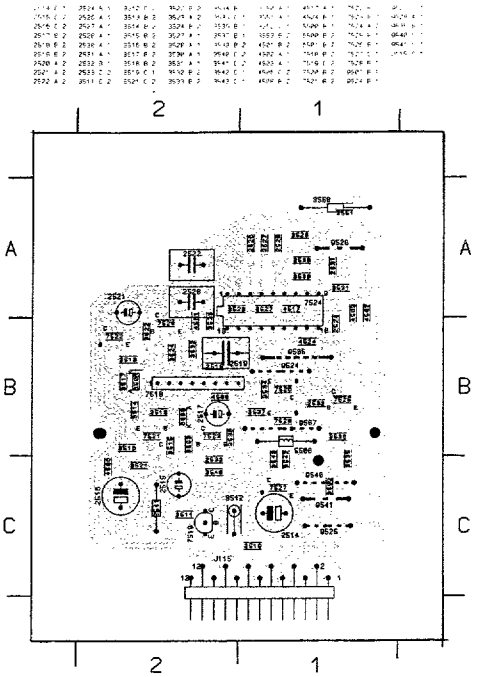
Black stretch



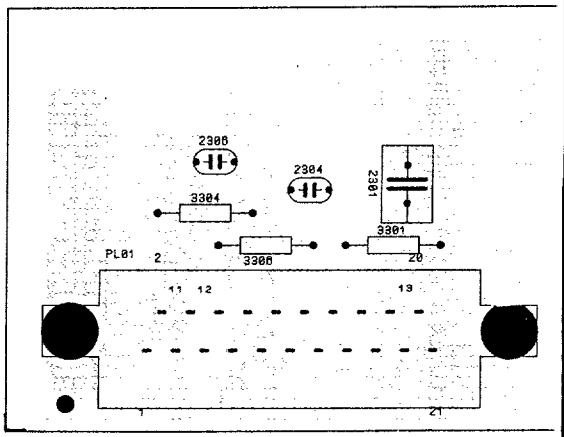
North-South (only 29")



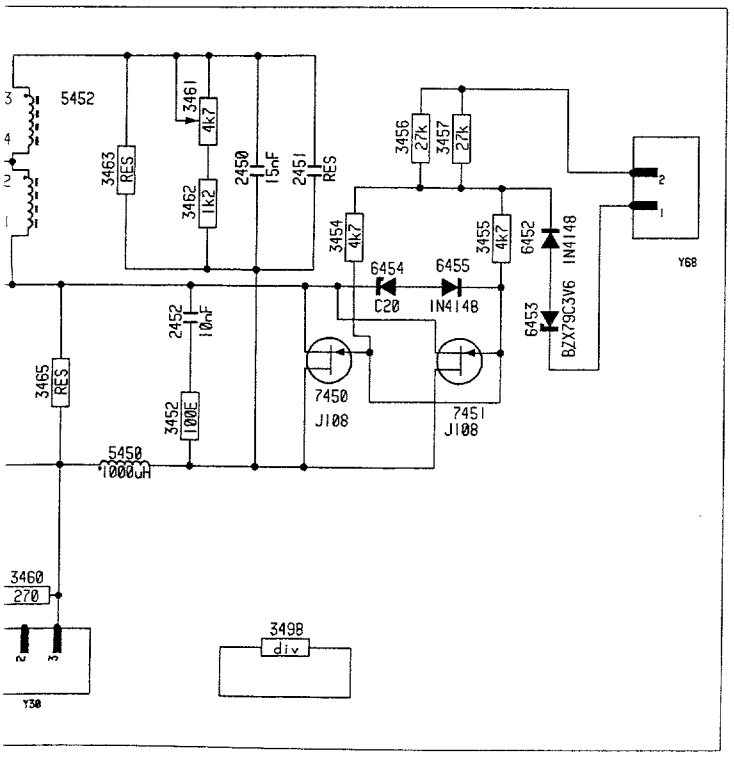
Black stretch

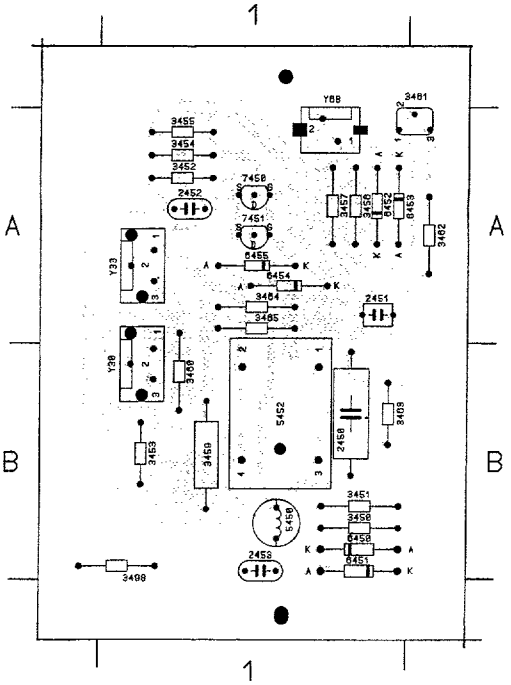


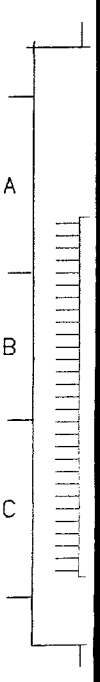
Euro AV3 Connector

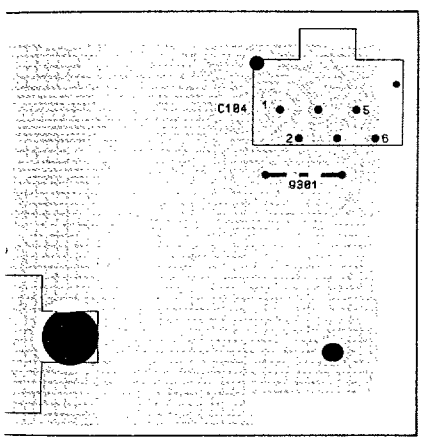


North-South (29")

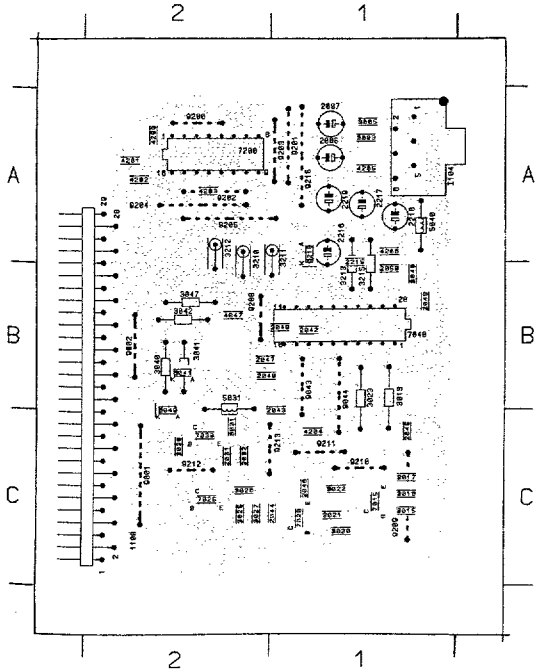


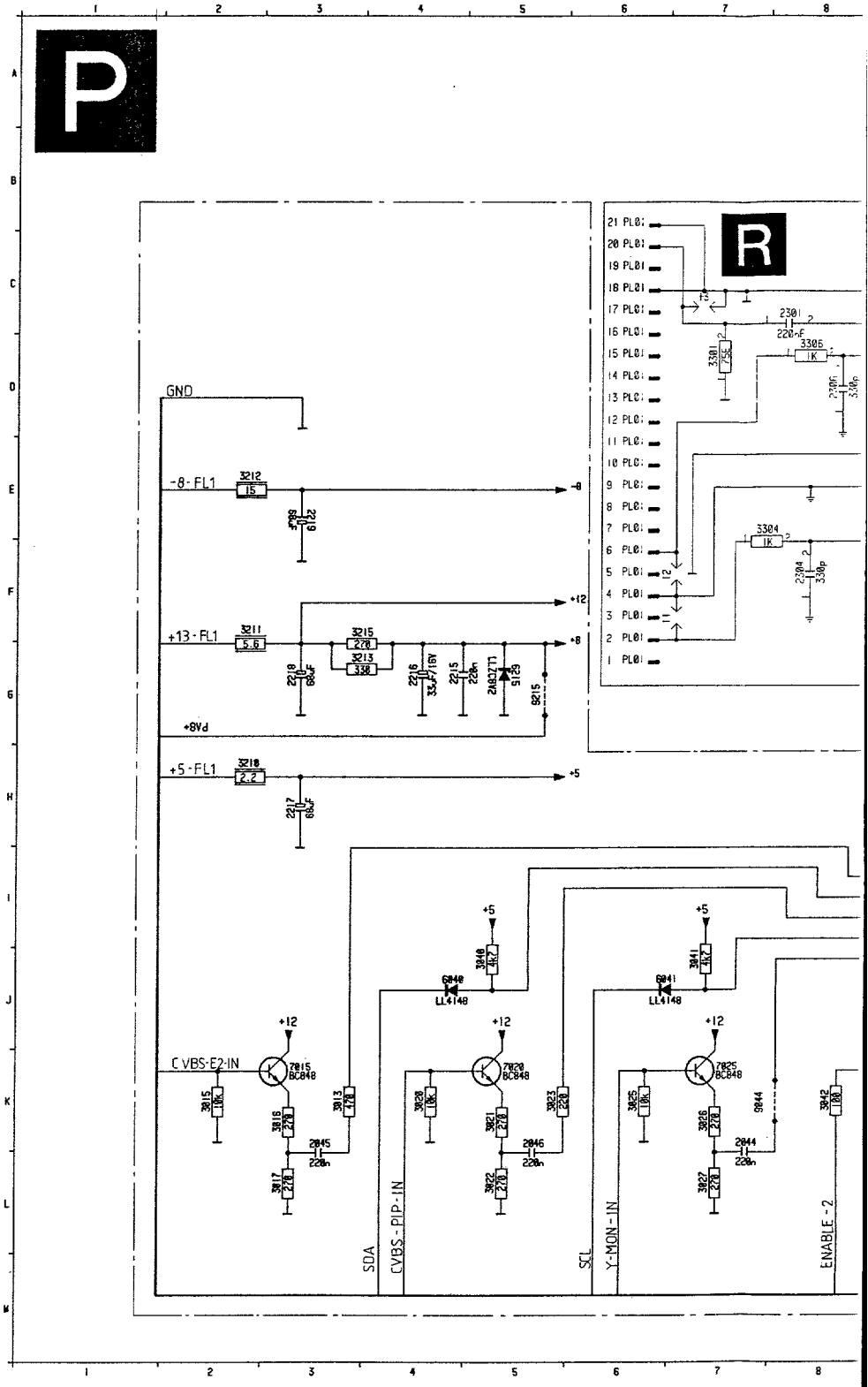




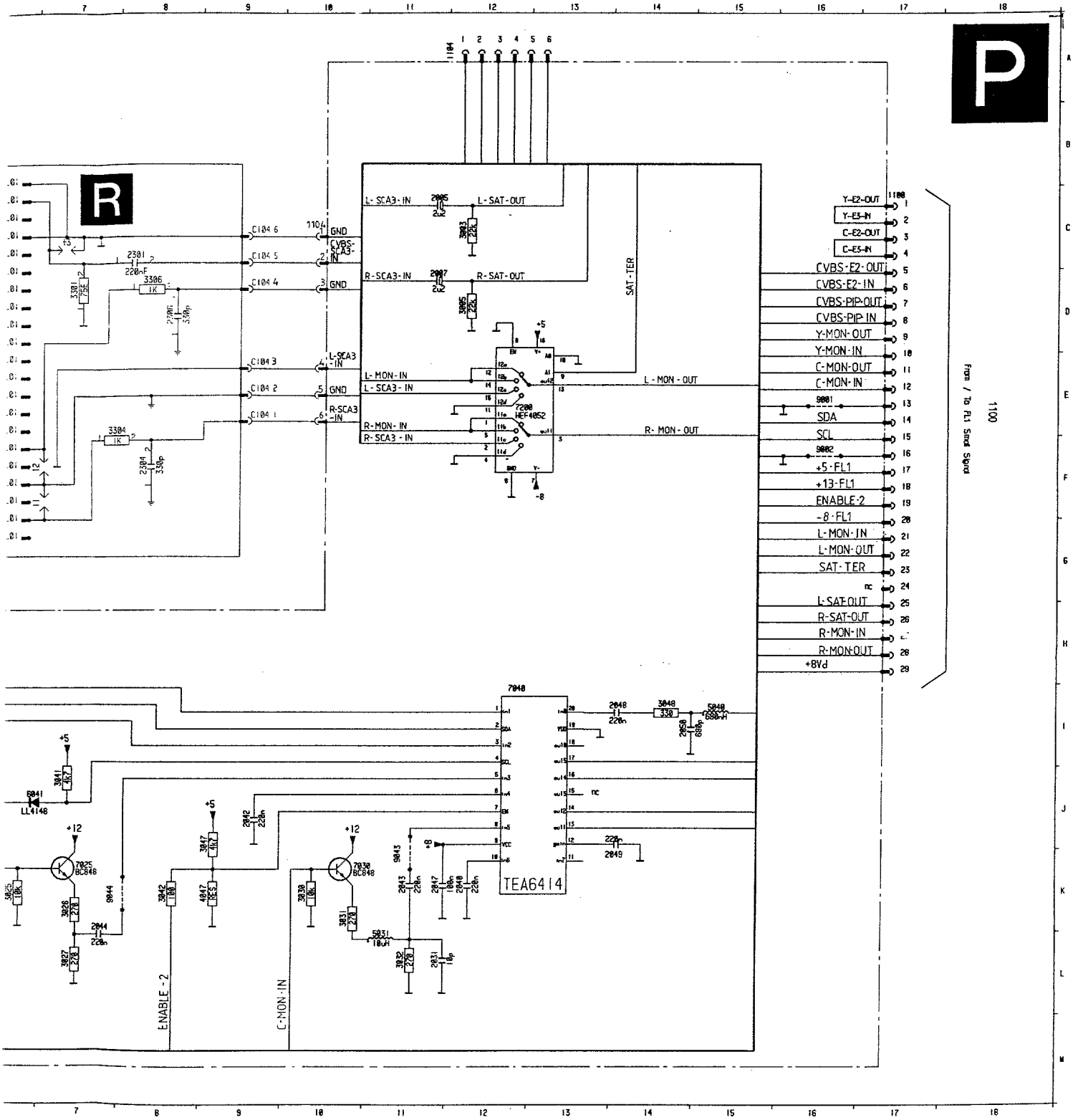


Euro AV3 Interface





Interface / Branchement Euro AV3



7. Electrical adjustments

Setting conditions

- Unless stated otherwise, the supply voltage used is: 220 - 240V ± 10%; 50 - 60Hz ± 5%
- Voltages and oscillograms are measured in elation to tuner earth. **Never** use the cooling plates as earth.
- Warming-up time ≈ 10 minutes
- For all measurements it is true that:
- probe Ri > 1MΩ; Ci < 10pF

1. Electrical settings on the large signal panel

1.1 +141V supply voltage

Supply the mains voltage; this must be isolated from the mains.
Connect a voltmeter over C2238.
Using R3371, on the SOPS DRIVE CIRCUIT (fig. 7.2) set the supply voltage to + 141V ±0.5V.

1.2 +5V supply voltage (FLx.x6/FLx.x7)

Connect a voltmeter to pin 8 of L02
Adjust the voltage to 5.4V using R3558

1.3 +13V supply voltage (FLx.x6/FLx.x7)

Connect a voltmeter to pin 6 of connector L02
Adjust the voltage to 14.2V using R3234.

1.4 Focusing

This is set with the focus potentiometer (top one on the Line output transformer/DAF Unit).

1.5 Dynamic 1) Astigmatic focus

This is set with the aid of the potentiometer on the bottom right of the DAF transformer. Repeat the adjustment of the Vg2 and focus.

1.6 Vg2 setting

Supply an aerial signal.
Set the contrast to maximum and the brightness and saturation to nominal.
Using an oscilloscope set to field frequency, measure the direct voltage level of the measurement pulse (fig. 7.1) on pin 9 of IC7705, IC7706 and IC7707 in relation to earth.
Now adjust the highest voltage level found with the aid of the Vg2 potentiometer (bottom left on the Line output transformer/DAF unit) to 150V ±2V.

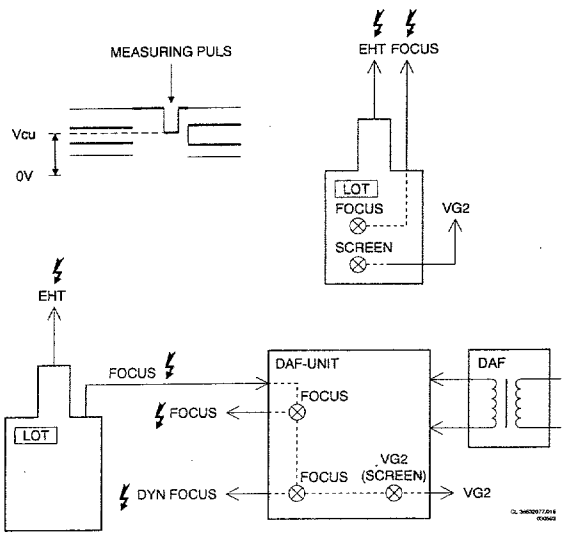


Fig. 7.1

1.7 Horizontal synchronisation

Connect point 5-IC7400 to point 9-IC7400.
Supply an aerial signal and set the receiver.
Adjust potentiometer R3406 until the picture is straight.
Break the through connection.

1.8 Horizontal centring

Feed in a test pattern that makes the horizontal linearity visible (e.g. a symmetrical cross pattern or a test circle).
Adjust the DC offset current through the horizontal deflection coil using R3513 so that the horizontal linearity is optimal (the distance between the two vertical lines should be equal on both the left and right hand sides of the picture). It is also possible to use a ruler for this purpose. The picture can then be centred using R3415.

1.9 Picture width

Set using potentiometer R3607.

1.10 Vertical centring

Set using potentiometer R3467.

1.11 Picture height

Set using potentiometer R3410.

1.12 Picture height

Movie expand on: set using potentiometer R3422.
Movie expand off: set using potentiometer R3410.

1.13 East/West correction

Set using potentiometer R3602.

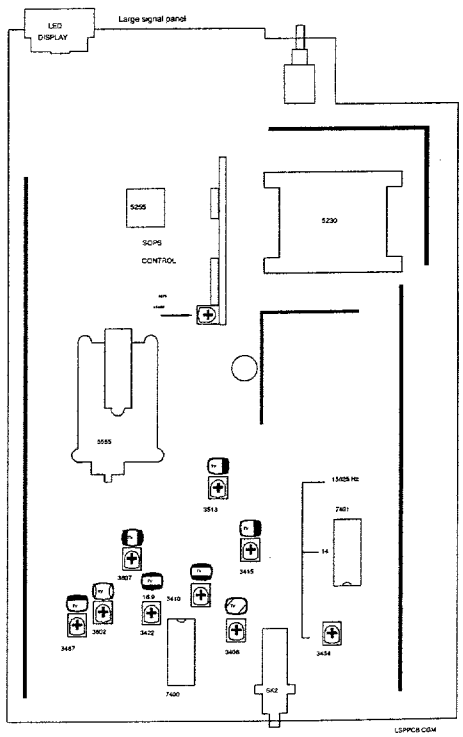


Fig. 7.2

2. E

2.1 S C si S th C U ar

2.2 4 S pc ar

2.3 E

2.3.1 C C th 4. pi os S R

2.3.2 4. C w C C S R

2.3.3 6. C E 2(C C S R

2.3.4 C C bi ei pr

2.3.5 C C bi ei pr

2.3.6 S C bl 3- C m

2. Electrical settings on the small signal panel

2.1 Stereo audio channel separation

Connect a signal generator with a 2 carrier stereo signal ("stereo" mode).
Select 1kHz for the right-hand channel and switch off the sound for the left-hand channel.
Connect an oscilloscope to pin 3 of Euroconnector EXT1
Using R3602 on the small signal panel, set the amplitude of the signal to minimum amplitude.

2.2 4.43 MHz chroma suppression circuit

Supply a colour bar signal. Connect an oscilloscope to point 17 of IC7324 and set L5305 to minimum amplitude of the chrominance signal.

2.3 Electrical settings IC7365 (TDA4650)

2.3.1 Chroma bandpassfilter

Connect a signal generator (e.g. PM 5326) to pin 20 of the euroconnector (EXT1) and set its frequency to 4.286 MHz/0.2 Vpp. Switch the unit to EXT1. Connect pin 27-IC7365 to pin 13-IC7365 (+12V). Connect an oscilloscope to pin 15-IC7365.
Set L5345 to maximum amplitude.
Remove the interconnection.

2.3.2 4.50 MHz NTSC sound suppression

Connect a generator to point 20 of Euroconnector EXT1 with a frequency of 4.50 MHz and 200mV$_{rms}$.
Connect point 26-IC7365 to point 13-IC7365.
Connect an oscilloscope to point 15 of IC7365.
Set L5346 to minimum amplitude.
Remove the short circuit.

2.3.3 6.50 MHz SECAM DK sound suppression

Connect a sine-wave generator to point 20 of Euroconnector EXT1 with a frequency of 6.50 MHz and 200mV$_{rms}$.
Connect point 28-IC7365 to point 13-IC7365.
Connect an oscilloscope to point 15 of IC7365.
Set L5346 to minimum amplitude.
Remove the short circuit.

2.3.4 Chroma 8,87 MHz auxiliary oscillator

Connect a pattern generator and supply a PAL colour bar pattern. Connect pin 17-IC7365 (TDA4650) to earth. Set C2380 so that the colour on the screen has practically stopped. Remove the interconnection.

2.3.5 Chroma 7,16 MHz auxiliary oscillator

Connect a pattern generator and supply a PAL colour bar pattern. Connect pin 17-IC7365 (TDA4650) to earth. Set R2379 so that the colour on the screen has practically stopped. Remove the interconnection.

2.3.6 SECAM demodulators

Connect a pattern generator and supply a SECAM black pattern. Connect an oscilloscope to pin 3-IC7365. Set L5370 to minimum amplitude.
Connect the oscilloscope to pin 1-IC7365. Set R3370 to minimum amplitude.

SMALL SIGNAL PANEL

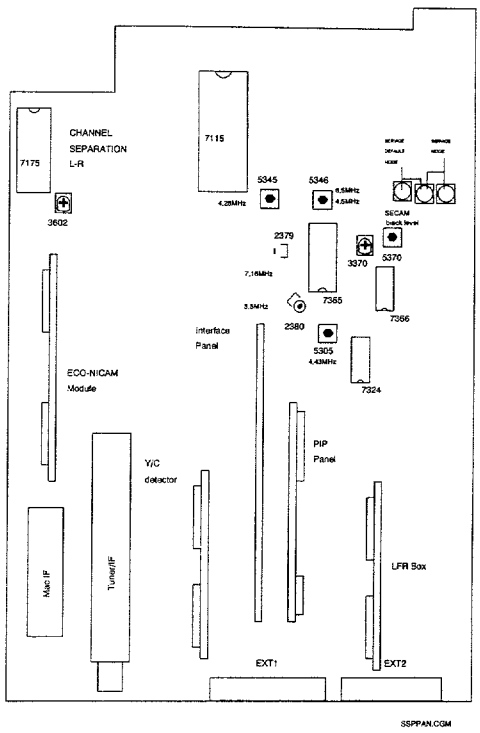


Fig. 7.3

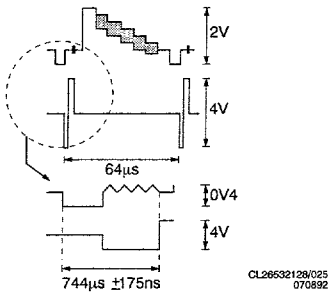


Fig. 7.4

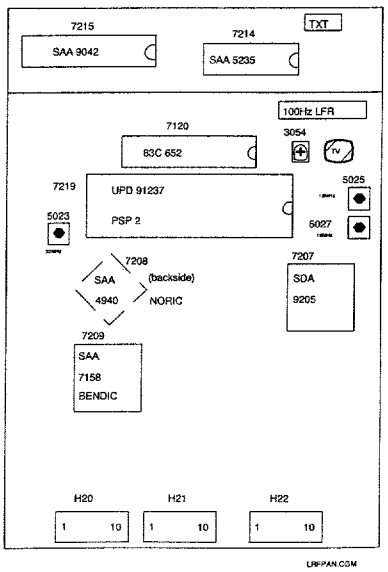


Fig. 7.5

Electrical adjustments

3. Electrical adjustments on the LFR box

3.1 Synchronisation

Connect point 5 of IC7216 to earth. Adjust R3054 until the picture is straight.
Remove the short circuit.

3.2 16MHz oscillator

Apply a PAL/SECAM signal. Measure the signals at point 1 of IC7219 and at point 5 of IC7216 simultaneously with an oscilloscope (fig. 7.9). Adjust coil L5027 so that the positive-going flank of the signal at point 1 of IC7219 comes 7.62 µsec after the negative-going flank of the sync pulse in the video signal (point 5 of IC7216).

3.3 32MHz oscillator

Force the STABLE OSD command to the microprocessor, by disconnecting the set from a possible antenna inputsignal. Measure the frequency at point 41 of IC7208. Using L5023 set the frequency to 32 MHz ±50 KHz.

3.4 12MHz oscillator

Switch on compress.
Measure the signals on point 1 of IC7219 and on point 5 of IC7216 simultaneously with an oscilloscope (fig. 7.9). Adjust coil L5025 so that the rising flank of the signal on point 1 of IC7219 comes 7.62 µsec after the negative flank of the sync pulse in the video signal (point 5 of IC7216).

4. Electrical settings on the ECO-NICAM decoder panel

4.1 Neutral frequency adjustment

Connect a frequency counter via a probe (Ci ≤15pF) to pin 19 of IC7001 (SAA 7280) and pin 15 (GND).
Adjust C2015 in such a manner that the clock frequency is set at 728.025 kHz. (±5Hz)

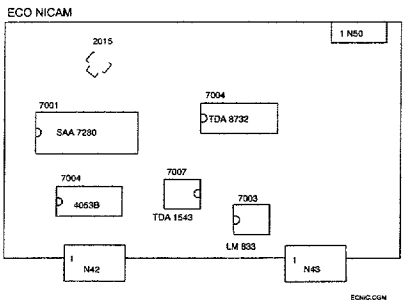


Fig. 7.6

5. Y/C detector adjustment

5.1 PAL/SECAM

Inject a chroma signal of 4.418 MHz/200mV on pin 15 of EXT2 SCART (PL05).
Connect an oscilloscope to the collector of T7266 (T7). Using L5201 adjust the 4.418 MHz signal to maximum amplitude.

5.2 NTSC

As PAL/SECAM but with a signal of 3.582 MHz/200mV. Adjust with L5200.

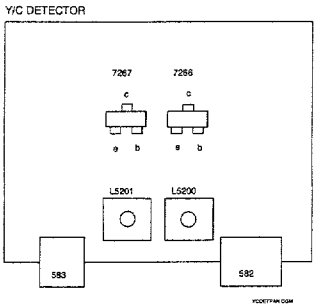


Fig. 7.7

6. Electrical settings on the PIP panel

Setting conditions

Before carrying out each setting, it should be ensured that a P.I.P. picture with colour bar is visible on the screen and the unit should have reached its operating temperature
(after ≈20 min.).

6.1 Horizontal synchronisation

Supply an aerial or generator signal.
Connect pin 28-IC7125 to pin 13-IC7125.
Connect pin 5-IC7755 to earth.
Measure the frequency on pin 17-IC7755 and set this to 15,625 Hz ±25 Hz with R3239.
Remove the short circuits.

6.2 AGC

If the picture from a strong local transmitter is distorted, adjust 3160 until the picture is not distorted.

6.3 Setting for PIP modules with TDA4554

6.3.1 Chroma bandpass filter

Connect a signal generator (e.g. PM 5326) to pin 10 of P17 and set its frequency to
4.286 MHz/0.2 Vpp.
Connect pin 27-IC7125 to 13-IC7125.
Connect an oscilloscope to pin 15-IC7125.
Set L5118 to maximum amplitude.
Remove the interconnection.

6.3.2 PAL chroma auxiliary oscillator

Connect a pattern generator and supply a PAL colour bar pattern. Connect pin 17-IC7125 (TDA4554) to earth. Set C2202 so that the colour of the PIP picture is practically still. Remove the interconnection.

6.3.3 NTSC chroma auxiliary oscillator

Connect a pattern generator and supply an NTSC M colour bar pattern. Connect pin 17-IC7125 to earth. Set C2212 so that the colour of the PIP picture is practically still. Remove the interconnection.

6.3.4 The delay line

Connect a pattern generator and supply a PAL colour bar signal. Connect the X-input of the oscilloscope to pin 1-IC7125 (TDA4554). Connect the Y-input of the oscilloscope to pin 3-IC7125 (TDA4554). Set the oscilloscope to the X-Y position.
Set L5155 and L5157 so that the vectors lie in one line (points which are furthest from the origin).
Set the pattern generator to the "DEM" mode.
Set R3157 so that the vectors lie on top of one another in the origin.

Electrical adjustments

6.3.5 SECAM identification

Connect a pattern generator and supply a SECAM colour bar signal.
Connect pin 27-IC7125 to pin 13-IC7125.
Connect an oscilloscope to pin 21-IC7125.
Adjust L5190 to maximum DC level.
Remove the interconnection.

6.3.6 SECAM demodulators

Connect a pattern generator and supply a SECAM signal without contents (black). Connect pin 27-IC7125 to pin 13-IC7125. Connect an oscilloscope to pin 1-IC7125. Using L5175, set the DC level during the scan equal to the DC level during the flyback.
In the same way set L5170, but now measure at pin 3-IC7125.
Remove the interconnection.

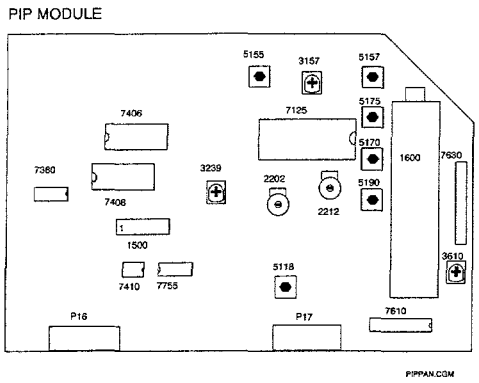
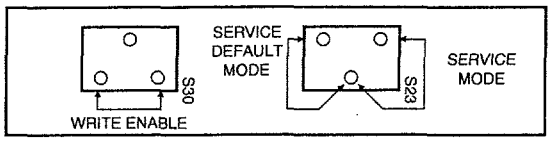


Fig. 7.8

7. Alignments in the Service Menu

The FL sets are equipped with EAROM protection. The EAROM protection will only work if pin 1 of IC7137 is high. If this point is made low by the pins of S30 on the SSP, the protection is switched off and the protected area can once more be written to. During adjustment in the service menu these pins must therefore remain connected together continuously.



7.1 Switch in the Service Menu by momentarily connecting together pins 2S323 and 1S323 on the small signal panel (diagram H). The Service Menu will then appear on the screen. The procedure is as follows:

- *Select the required alignment with the* coloured keys A to E.
- Change the values set using the "Menu +/-" key.
- Store the values set in the EAROM and leave the Service Menu by selecting STORE.

● **The error codes are only displayed when the 'Service Mode' or the 'Service Default Mode' are switched on.**

7.2 White Drive Alignment

Switch the set into 4:3 mode.
Switch out the DNR via the remote control.
Select a white picture. (A black picture (e.g. VCR1) set at maximum brightness is also suitable).
Switch the Service Menu in.
Select the required white drive alignment by adjusting the colours red and blue in relation to green (green is the reference colour).

Remarks: In the original factory settings "white" has a colour temperature of 7600K (White with a bluish tint).
The point of departure is green with a value of 44.
The factory setting for blue is then approx. 44.
The factory setting for red is then approx. 21.

7.3 Cut-off Alignment

Switch the set into 4:3 mode.
Switch out the DNR via the remote control.
Select a black picture (e.g. VCR1).
Switch the service menu in.
Set the brightness level so that the picture just (but *clearly) illuminates.*
Using the Cut-off adjustments align the colour temperatures in such a manner that at minimum illumination of the picture they are the same as the colour temperatures at maximum brightness.
(At minimum picture illumination it is possible that one colour may dominate. This is however normal and does not have to be (fully) compensated with the cut-off alignment).

Remarks: In the original factory settings "white" has a colour temperature of 7600K (White with a bluish tint).
The point of departure is green with a value of 28.
The factory setting for blue is then approx. 33.
The factory setting for red is then approx. 25.

7.4 Option Alignment

The microprocessor communicates with a great number of components in the set. For correct communication the microprocessor has to know what IC's and modules are present in the set. This is done using option codes. An incorrectly set option code will give a communication problem and an accompanying error code. Every function has been allocated a value. The sum of 8 values forms an option code. This number can vary from 0 to 255. The option code tables are given at the end of this paragraph.

For example, a set has:

Option code 1

Function	*Value*
Front end FQ916/ME/IF	2
PIP module	8
NTSC-M	16
NICAM module	64
2nd front end on PIP module	128 +

Option code 1 is now:	**218**

Option code 2

Function	*Value*
100 Hz Digital Scan	4
100 Hz Digital Scan	64
Comb Filter	128 +

Option code 2 is now:	**196**

Option code 3

Function	*Value*
16:9 PTV	64 +

Option code 3 is now:	**64**

Option code 4:

Function	*Value*
50Hz-PIP	2
FL2/4 model	4
DAF	8
Mozaik screen on	32
Picture rotation	128 +

Option code 4 is now:	**174**

Option code 5

Function	*Value*
Third SCART (Euro AV3)	1
SCAVEM	2 +

Option code 5 is now:	**3**

Optioncode 1	
Nbr.	**Function**
0	**Front end = FQ816 / FQ916** A reception of PAL BG or PAL BG and SECAM BG is now possible
1	**Front end = FQ844 / FQ944** Only reception of the UHF band is now possible
2	**Front end = FQ816/ME/IF / FQ916/ME/IF** Reception of SECAM L but not of SECAM L' is now possible (reception of NTSC-M is now usually also possible).
4	**Front end =FQ916/MF/IF** Reception of both SECAM L and SECAM L' is now possible (NTSC M reception is generally possible now via the Euroconnector).
8	**PIP module present** This makes it possible to show PIP (Picture in Picture) displays.
16	**NTSC-M reception possible** This is normally always in combination with front end FQ816/ME/IF or FQ816/MF/IF or FQ916/ME/IF or FQ916/MF/IF
32	**SECAM DK module fitted** In this case transmissions using the SECAM DK system can also be received.
64	**NICAM module fitted** In this case the digital sound with NICAM transmission can be received.
128	**Second front end for PIP fitted** If this second front end is fitted a second transmitter can be displayed in the PIP picture. The PIP function (number 8) still applies.

Optioncode 2	
Nbr.	**Function**
1	**Not in use**
2	**Not in use**
4	**100Hz** 0 for 50Hz or 100Hz-ECO (FLx.x7) 1 for 100Hz Digital Scan (FLx.x4/FLx.x6) See number 64 further.
8-32	**Not in use**
64	**100Hz** 0 for 50Hz 1 for 100Hz-ECO (FLx.x7) 1 for 100Hz Digital Scan (FLx.x4/FLx.x6) See number 4 further.
128	**Comb-filter** Select this bit for sets with a comb-filter with IC7000 = MC141625 on the comb-filter module (number 16 of option code 4 should now be zero).

Electrical adjustments

Optioncode 3	
Nbr.	**Function**
1-32	**Not in use (SAT)**
64	**16:9 present**
128	**"Videocolor 36" Picture tube**

Optioncode 4	
Nbr.	**Function**
1	**Teletext Peaking Filter on/off for LFR box (Scandinavia)** In Scandinavia this number must be selected .
2	**50Hz-PIP in a 100Hz set** Applies to FLx.x7. Applies to Digital Scan sets (FLx.x4/FLx.x6) with the Multi-PIP possibility. (This option is 0 for the FL1.14 36" (no Multi-PIP))
4	**FL2/4 model** (see chapter 4 also)
8	**16:9 picture tube with DAF (Dynamic Astigmatic Focus)** Recognisable by the potentiometers for 'Focus' and 'VG2 (SCREEN)'; these are located on the DAF unit instead of on the high voltage transformer (LOT).
16	**Not in use**
32	**Mozaik screen on/off**
64	**Not in use**
128	**Picture rotation possible (frame rotation) (16:9)**

Optioncode 5	
Nbr.	**Function**
1	**Third SCART present**
2	**SCAVEM switchable present**
4	**Not in use**
8	**SCAVEM non switchable present**
16	**Auto TXT install enable**

8. Repair tips

1. The Service Default Mode

The FL is equipped with a service default mode. The service default mode is a fixed, definite state to which the set can be switched.

1.1 Definition state

The definition of the fixed state in the service default mode is as follows:

- all sound and picture controls are in the central position (exception volume which is turned down)
- tuned to 475.25 MHz
- system:
  * PAL/SECAM BG for Multi Europe
  * PAL I for UK
  * SECAM L for Multi French

1.2 Switch on and off

The service default mode is switched on by shorting pins 2S323 and 3S323 on the small signal panel.

The service default mode can only be switched off by switching the set to stand-by. If the set is switched off and then on again using the mains switch or the mains plug, the service default mode will remain on.

If the set switches to stand-by immediately after switching-on, the set cannot be operated and also cannot be switched to the service default mode. The child-proof lock has already been activated.
To deactivate the child-proof lock the following series of commands has to be given using the remote control (see also Section 9):
<MENU>-<BLUE>-<RED>-<MENU+>-
<MENU OFF>

1.3 Fault signals

To indicate that the set is in the service default mode, the following is displayed on the screen:

SERVICE 00 00 05 06 05

The five numbers after the word "service" stand for the last five fault signals noted by the operator(s). The number on the extreme right represents the last fault signal, that on the extreme left the last fault signal but 4. Since this enables fault reports to be looked at afterward, it means that intermittent faults can be traced.
When the set leaves the service default mode, the fault-report memory is cleared.

1.4 Operation

During the service default mode the set will accept all operating commands. When, however, the set is switched off and on, it will return to the state as defined above.

2. Error messages

The error codes are only displayed when the 'Service Mode' or the 'Service Default Mode' are switched on.

In both FL1 and FL2/4 models the I^2C error messages are indicated by a combination of flashing LED's. In FL1 7 LED's on the front of the set are used. In FL2/4 only 2 LED's have been fitted to the front of the set: 'on' and 'stand-by'; for service purposes the 7 LED's have been fitted inside the set in an SMD version. These are located on the solder side of the panel with buttons for local control. The 2 LED's on the front of the set are connected in parallel with the corresponding service LED's.

Figure 8.1 illustrates the situation for FL1 and FL2/4. A table of error messages is provided at the end of this chapter.

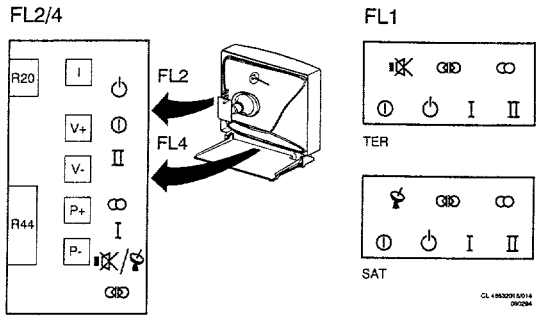


Fig. 8.1

3. Replacement of EEPROM IC7137

If, during a repair, the EEPROM has to be replaced, the microprocessor will detect that the EEPROM is empty. A fault signal (No. 21) will then be displayed.
If the service mode is now activated (see section 7), the microprocessor will load the EEPROM with a number of standard values for the white balance and the other linear settings. These values, however, must all be checked and, if necessary, re-adjusted.
All options have also to be set, the programs installed and the personal preference set.

4. Extension prints

To simplify the measurements ON the various modules extension prints are available for the modules fitted with BTB connectors. Modules can be placed in these connectors so that they stick out above the other prints when the chassis is in the service position.
The code numbers for the extension prints are:

5-fold	4822 395 30261
6-fold	4822 395 30259
8-fold	4822 214 31402
9-fold	4822 395 30258
10-fold	4822 395 30257

5. Removing the PIP module

The PIP module can be simply removed, leaving the set functioning normally (The LED display does however indicate an error condition). Following the removal of the PIP module the signal path is broken. The signal path can be restored by placing the 5-core flat cable with connector S56 in connector foot S16 (see diagram D). The error message can be removed through the application of the option codes (see chapter 7).

6. Extension cables

Extension cables are available to lead the large signal and small signal panel signals (LSP and SSP) separately out of the set. These are made up as follows:

4822 320 20209	Set of 6 cables for LSP and SSP connections.

See chapter 4 also.

7. Central repair

For panels and modules which are difficult to repair there remains a possibility for central repair. Following receipt of a defective module a repaired and tested module is issued.
In order to guarantee the quality of the central repair service a certain amount of information regarding the defective panel is required. This information should be submitted together with the defective panel. This concerns the following information:

1. Clear description of the fault
2. Indication of intermittent or continuous fault
3. Type/version number of the set
4. AG-production code and week/year number
5. Serial number

The defective modules should be complete and free of mechanical damage.
These facilities are offered for the modules below:

LFR box [L]+[M]	4822 212 31233	FL2.2X
LFR box [L]+[M]	4822 212 31313	FL2.24/58
LFR box [L]+[M]	4822 212 31314	FL2.24/62
100Hz box [L']	4822 212 31392	FL4.27

8 Diagnosis and protection

8.1 Hardware and software protection

In case any serious fault occurs in the set, one of the protection circuits will activate. A protection circuit switches of the main power supply (SOPS) via the stand-by input (STBY) of the SOPS control panel. This input is located on pin 1 of connector pin L40 with test point number TP56, and is illustrated on diagram A.
As the microprocessor is fed by a separate stand-by power supply (SOPS), the processor and the LED's will continue to operate, even when the main power supply is switched off.

A number of protection circuits can switch off the power supply independently and immediately (hardware protection). In two protection circuits the microprocessor itself switches off the power supply (software protection).

All protection circuits come together on the stand-by input (TP56 of the main power supply. A diagnosis determines which protection circuit is active.

8.2 Protection test point TP56 [diagram A]

The following voltages may be present on the stand-by input of the SOPS control panel (TP56): [see diagram A]

1	Approx. 17V	during operation;
2	0.5 - 1V	during hardware protection; (this value is maintained by a thyristor circuit formed by TS7380/TS7381);
3	0.5V	during stand-by and software protection.

8.3 Hardware protection:

1 Power supply voltage +13 from the SOPS too high (+V) [diagram A].
This protection circuit activates if the voltage in +13V circuit of the SOPS becomes too high during operation.

2 SOPS and/or +11/-11V for the audio output amplifier defective (SOUND-PROT).
[diagram G]
The protection circuit activates when the +11V and -11V voltages are no longer in balance, or when both voltages are absent. This protection circuit also operates when the SOPS does not function or is short-circuited.
This protection circuit is fed by the start-up voltage 'Vstart' from the SOPS.

3 Beam current too high (I-BEAM) [diagram B]
When the beam current becomes too high this protection circuit switches off the power supply. Before this protection circuit can activate the picture will first illuminate brightly. This fault occurs for example on the absence of the +200V power supply voltage on the picture tube panel.

4 Deviating LOT behaviour (EHT, LOT-PROT) [diagram B].
This protection circuit becomes active when a 'unusual' voltage forms appear on the LOT outputs (5555). This may indicate defective or loose components in the line deflection circuit. (LOT, switching transistors, capacitors).

5 East/west output stage defective [diagram B].
This protection circuit activates when the current through the east/west switching transistor T7610 exceeds a specific value. In this case transistor T7542 will conduct for a brief period.
(the base-emitter voltage Ube from T7542 is then momentary greater than 0.6V).

6 Vertical deflection end stage (IC7450) defective [diagram B].
The frame output stage IC7450 has a protection output (pin 7, TP62). This output becomes momentarily high on any defect in this IC or during the absence of the power supply voltage.
During normal operation there are short pulses on this output.
The frame output stage is fed by a winding on the LOT (5555) (+28V or +32V).
During diagnosis a check should be made whether the +28/+32V power supply voltage continually drops before the protection circuit output is activated. If this is the case then one of the other protection circuits is responsible for switching out the power supply.

Repair tips

By measuring the timing pulses between the protection output (pin 7) and the power supply voltage (pin 6) in relation to earth (pin 2 or 4) it can be determined whether the protection is originating from the frame output stage. The protection circuit overview at the end of this chapter provides a schematic overview of the measurements.

8.4 Software protection

8.4.1 Error message 99

Error message 99 is displayed when software protection is generated by the microprocessor. Software protection becomes active when the +13V and or +5V power supply voltage is not present on the small signal panel (SSP). Due to the absence of the power supply the connected components are unable to provide an I^2C signal to the microprocessor. The processor then sets the SOPS in stand-by. If this is the case error message 99 is then displayed.
Software protection can be switched out by activating the 'Service Default Mode' (see §1).

If the +13V or +5V are absent as a result of hardware protection switching out the power supply, error message 99 will be displayed by the LED's following a short period, as the microprocessor is no longer receiving any signal from the connected IC's. The processor now bridges the hardware protection via the STBY signal. Each hardware protection will therefore eventually result in software protection, resulting in error message 99 being displayed.

During hardware protection the microprocessor makes repeated attempts to communicate with the connected I^2C-IC's before making a decision for software protection.
During this period (up to approximately 5 minutes) the set will not react to any operational commands.
Because none of the I^2C-IC's responds in this period various error messages will be displayed by the LED's.
If error message 99 does not eventually appear then the protection circuits are not operational and the cause of the fault can be sought elsewhere.

When the microprocessor generates a STBY signal for implementing software protection TP56 will be made lower than 0.5V by the STBY signal, through which any eventual hardware protection on TP56 will be bridged.
In order to determine whether hardware protection is active via TP56 the voltage on TP56 should be measured with the set in the 'Service Default Mode' or measured before error message 99 appears on the LED display.

8.4.2 Software protection

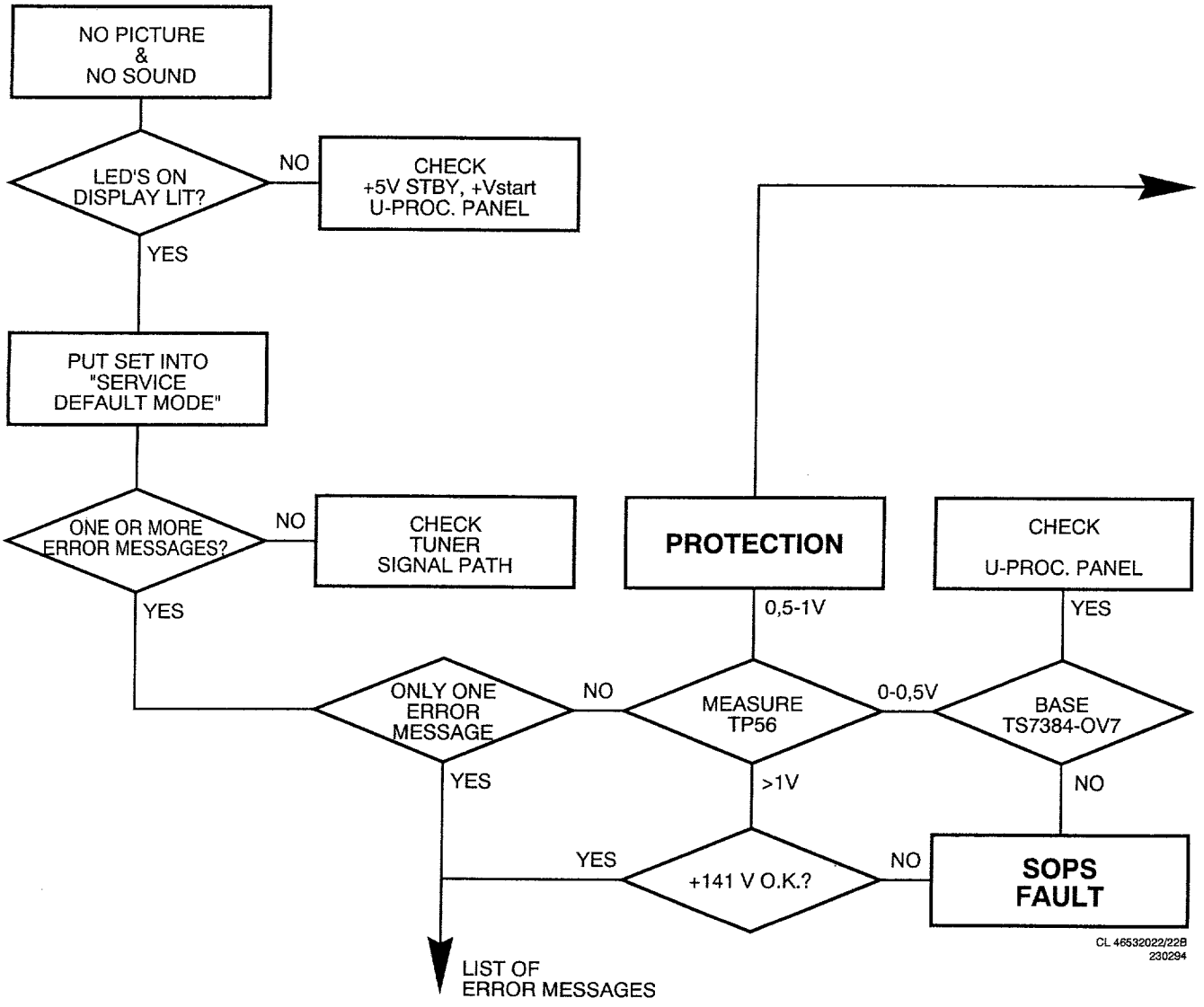
7 +5V on the small signal panel (SSP) [diagram B and C]
To test whether the +5V power supply voltage, from the LOT winding (5555) [diagram B], is reaching the small signal panel without short-circuiting, the front-end (1160 [diagram C]) must provide a signal to the microprocessor via IC within a specific time.
If this signal does not arrive, the microprocessor switches the main power supply into stand-by, and the LED's will indicate error message 99 once more.
To test whether the front-end is defective the service default mode will have to be selected. If the power supply voltages on the front-end are correct and a front-end error message persists (error 11), then the front-end is defective.

8 +13V on the small signal panel (SSP) [diagrams A, D and F]).
To test whether the +13V power supply voltage from the main power supply (SOPS) [diagram A] is reaching the small signal panel without short-circuiting, IC7430 (TDA4680 video processor, [diagram D]) or IC7600 (TDA8417, stereo decoder, [diagram F]) or IC7680 (TDA8425, audio processor [diagram F]) must provide a signal via I^2C to the microprocessor within a specific time. If none of these three IC's provides any signal the microprocessor switches the main power supply into stand-by. The LED's indicate error code 99.

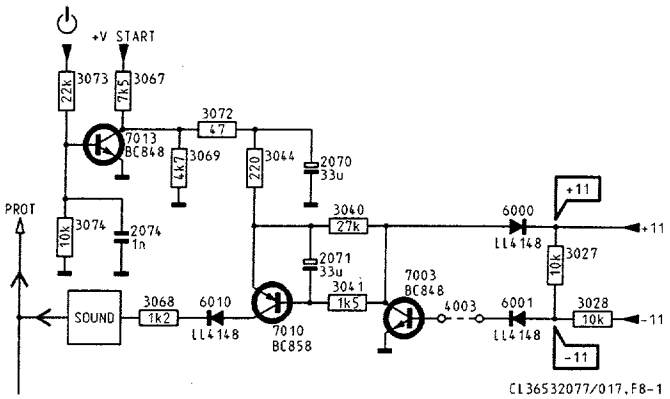
9 SAT box power supply defective (only for set with a SAT box (D2-MAC)).
When the SAT box microprocessor does not send a signal to the main processor in the set, the main processor, following error message 51 (SAT box processor), will switch the software protection in. The LED's now indicate error code 99.
To test whether the SAT box processor is defective the service default mode must be selected. If only the error message from the SAT box is now indicated (error 51), and all power supply voltages on the processor are correct, then the SAT box processor is defective.
The operation of the SAT box power supply [diagram O] can be checked as followed:
Disconnect the SAT box and chassis from one another by disconnecting the band cable between the interface panel [diagram P] and the SAT box [diagram O].
When after a short time the set can be started up from stand-by the SAT box will have an incorrect power supply and error message 99 does not appear.

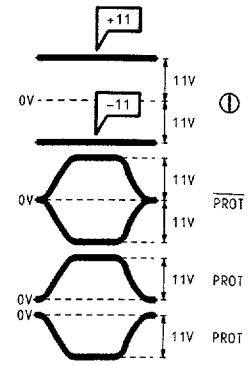
8.5 Measurements in the protection circuits.

All hardware circuits are illustrated in figure 8.2.
The oscillograms indicate the voltages on the relevant test points immediately after the set is switched on.
In this case the signals illustrated are for during:
- normal operation
- protection caused by this circuit (PROT);
- protection caused by another protection circuit (N-PROT).

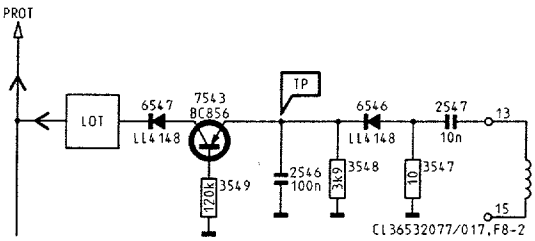

NO PICTURE
&
NO SOUND
LED'S ON
DISPLAY LIT?
NO
CHECK
+5V STBY, +Vstart
U-PROC. PANEL
YES
PUT SET INTO
"SERVICE
DEFAULT MODE"
ONE OR MORE
ERROR MESSAGES?
NO
CHECK
TUNER
SIGNAL PATH
YES
PROTECTION
0,5-1V
CHECK
U-PROC. PANEL
YES
ONLY ONE
ERROR
MESSAGE
NO
MEASURE
TP56
0-0,5V
BASE
TS7384-OV7
YES
>1V
NO
YES
+141 V O.K.?
NO
SOPS
FAULT
LIST OF
ERROR MESSAGES
CL 46532022/22B
230294

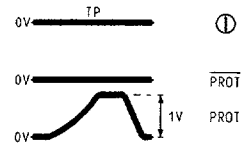
+11 V
-11 V

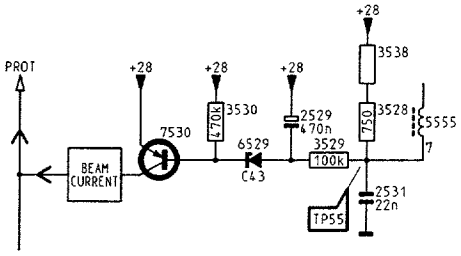


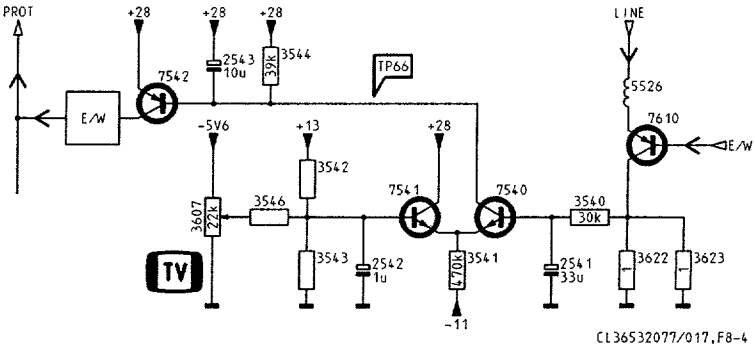


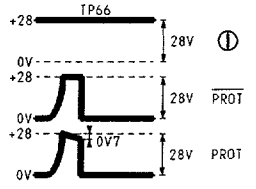
EHT



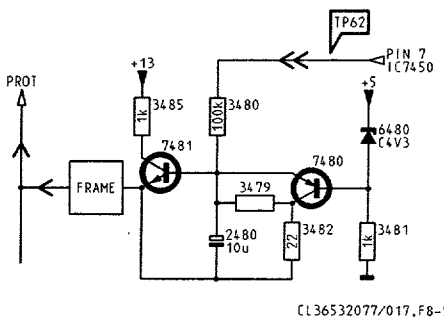


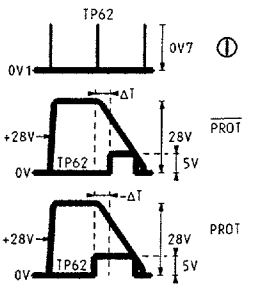






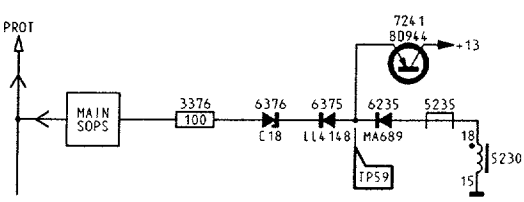
TV

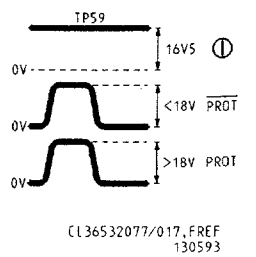




46532022/22B
230294

+V





CL36532077/017.FREF
130593

Fig. 8.2

List of error messages

Error number on screen	Flashing LED							Description of error
	🔇			⏻		I	II	
1[1]			X		X	X		I²C, IC7108, SSP [H] (MSM6307)
3					X	X		I²C, IC7215, 100Hz SAA 9042 [L] I²C, IC7111, TXT SAA 9042 [L']
4				X		X		I²C, IC7220, 100Hz [M] [L'} J83C652
5				X			X	I²C, IC7408, PIP [J] (SDA9088)
6				X	X	X		I²C, IC7600, SSP [F] (TDA8417)
7							X	I²C, IC7680, SSP [F] (TDA8425)
8						X	X	IC7440, frame rotation [Y], PCF8574 (16:9)
9			X	X		X		I²C, IC7430, SSP [D] (TDA4680)
10				X	X		X	I²C, IC7395, SSP [D] (TDA8443)
11				X	X			I²C, front-end, SSP [C] (FQ 9XX)
12						X		I²C, IC7137, SSP [H] (X24C04)
13			X					I²C, bus on chassis blocked
14			X	X				I²C, IC7258, SSP [C] (HEF4094)
15			X	X	X			I²C, IC7219, SSP [C] (TEA6414)
16			X			X		I²C, IC7040, SAT Interface [P] (TEA6414)
17			X		X			IR-receiver on SSP [H] blocked (1100)
18				X		X	X	7115, SSP, µ proc. [H]
19			X	X	X	X		UART Bus blocked, 7115, SSP, µ proc. [H]
20				X	X	X	X	7115, SSP, µ proc. [H]
21				X				EAROM X24C08 empty, IC7137, SSP [H] (§ 8.3)
23	X				X			I²C, IC7080, convergence panel [V] (TDA8444) (PTV)
28		X						I²C, PIP tuner [J]
29		X			X			I²C, IC7638, PIP-modulo [J] (SAA1300)
30			X		X		X	I²C, IC7175, SSP [C] (PCF8574)
31			X		X	X	X	I²C, IC7001, NICAM-panel [K] (SAA7280)
33		X		X				I²C, PLL (1500) PIP modulo [J]
34[1]	X		X				X	LNC supply on SAT box [Q,R] not correct
35[1]	X		X		X		X	IM-bus on SAT box [Q,S] blocked
36[1]	X		X	X			X	I²C, bus on SAT box blocked
37[1]	X		X	X	X		X	I²C, IC7450, D2-MAC [S] (X24C02)
38[1]	X		X			X	X	I²C, SAT Tuner [Q] (SF914; SF916)
39[1]	X		X		X	X	X	HEF STROBE 1, IC7925, FSS [T] (HEF4094)
40[1]	X		X	X		X	X	D2-MAC [S]
41[1]	X		X	X	X	X	X	HEF STROBE 2, IC7475, D2-MAC [S] (HEF4094)
42[1]	X				X		X	IC7250, TUNER/CONTROL [Q]
43[1]	X			X			X	UART bus blocked IC7250, TUNER/CONTROL [Q]
44[1]	X			X	X		X	SAT Tuner [Q] (SF914/916)
45[1]	X					X	X	IC7250, TUNER/CONTROL [Q]
46[1]	X				X	X	X	IC7250, TUNER/CONTROL [Q]
47[1]	X			X		X	X	IC7262, TUNER/CONTROL [Q]
48[1]	X			X	X	X	X	D2-MAC [S]
49[1]	X			X		X		EAROM X24C02 empty, 7450, D2-MAC [S] (§17)
51[1]					X	X	X	IC7250, TUNER/CONTROL [Q]
52[1]			X				X	D2B Bus EXT, SSP [H] blocked.
53			X			X	X	IC7330, MAC TXT [S], TPU2735
55			X	X		X	X	IC7140, Panorama [B], PCF8574 (16:9)
99	X		X		X			Protection

[1] This error is only possible on sets with built in SAT box.

- **The error codes are only displayed when the 'Service Mode' or the 'Service Default Mode' are switched on.**
  In case an error indication on the set is not included in this table, then check the optional codes (see § 7).